CITY OF DILLINGHAM COMPREHENSIVE PLAN 1985

TRYCK NYMAN & HAYES
ENGINEERS/PLANNERS/SURVEYORS
OVER 30 YEARS SERVICE TO ALASKA

PREFACE

The Planning Services Division of Tryck, Nyman & Hayes with some assistance from Coopers and Lybrand's Management Consulting Division worked with the City of Dillingham to complete this update of the comprehensive plan. Highlights of the update to the City of Dillingham Comprehensive Plan include:

- o general discussion of comprehensive planning and its role in community development,
- o update of population projections and economic overview,
- o goals and objectives for government, economic development, transportation, land use, utilities, community facilities, and capital improvements program,
- o recommendations for plan implementation,
- o summary descriptions of relevant studies, and
- o stand-alone 24" x 36" sheet with major goals and objectives and land use map. Completion of the poster sheet is pending the availability of the latest survey of the city boundaries and mapping of the townsite and Dillingham area.

The focus of the update was guided by residents' participation in a series of community meetings extending from April through December, 1985. A kick-off meeting to identify comprehensive planning issues was held in April. Informal discussions with planning commission and city council members and residents occurred over the summer. In September, a draft of the comprehensive plan was informally presented at Dillingham Planning Day. Throughout the comprehensive planning process, Tryck, Nyman & Hayes' Planning Manager Caren Mathis kept residents apprised of progress through regular mailings.

As a result of the community meetings, adjustments were made to the draft comprehensive plan. Then, on October 8, 1985, Tryck, Nyman & Hayes formally brought the comprehensive plan update before the planning commission. There was a public meeting. The planning commission passed a resolution to recommend the plan to the city council. December 5, 1985, the Dillingham City Council adopted, by ordinance, the Dillingham Comprehensive Plan Update.

The plan is written to meet the needs and interests of a diversity of users. It will serve as a guide for the planning commission and city council during such activities as budget workshops. The comprehensive plan can be used to launch the development of a capital improvements program. The plan can also be a guidebook for cooperative planning efforts that include important local decision making bodies such as the school board. Other uses of the comprehensive plan include distribution to legislators and consultants, all who need the basic information concerning Dillingham to make informed decisions.

A strong counterpart of the comprehensive plan update is the Port/Harbor Development Study (November, 1985). The Port/Harbor Development Study is an economic development study which presents some real alternatives for Dillingham in realizing some of the economic benefits of the fishery activities. The development study was done concurrently with the comprehensive plan and is

comprised of three parts: Dock and Harbor Revenue Analysis; Port and Harbor Needs Assessment and Alternatives Analysis, and Marine/Fisheries Economic Development Plan. The goals and objectives in Chapter Six of the Dillingham Comprehensive Plan Update reinforce the Port/Harbor Development Study.

ACKNOWLEDGEMENTS

This plan belongs to the community of Dillingham. To them is owed a great thanks for their participation. City Manager Jim Dunn and Planning Director Jeff Labahn are to be commended for their close attention to the progress of the plan. Finally, inspirational credits go to Peter McDowell of Coopers & Lybrand.

City Council

Mayor Leon Braswell
Jackie Knutsen
Chow Taylor
Nels A. Anderson, Jr.
Curt Armstrong
John M. Pearson
Mary Ellen Darling

Planning Commission

Chuck Mayer
Dan Layland
Henry Strub
Victor Sifsof
Gust Wahl
Mike Harder
Sue Flensburg

TABLE OF CONTENTS

TABLE OF CONTENTS (Cont'd)

FIGURES AND TABLES

CHAPTER ONE

Planning for Community Development

CHAPTER ONE

PLANNING FOR COMMUNITY DEVELOPMENT

Introduction

The City of Dillingham, Alaska, is a regional center in Bristol Bay, one of the major fisheries resource areas in the world. Numerous studies and four major planning projects have been conducted in Dillingham over the past 15 years. Studies have focused on the salmon fisheries industry, boat harbor improvements, and basic infrastructure such as water and sewerage systems. The city adopted a comprehensive plan in 1971, which was one of the only formal guides available for development decisions for over a decade.

From the time Dillingham's first comprehensive plan was completed to the next comprehensive planning effort in 1981, several forces affected the area. Physical, economic and social forces changed the Bristol Bay region and the Dillingham area. These forces were the result of a dynamic salmon fishery, the increase in offshore processing, and the fishery activity's economic impact on the Dillingham area. A federal outer continental shelf oil lease schedule included Bristol Bay as part of the tracts to be leased. This inclusion was contested by the State of Alaska. Finally, among those forces affecting the Dillingham area was the passage of the Native Claims Settlement Act.

To plan for the effects of these changes, the City of Dillingham updated its 1971 plan in two phases in 1981 and 1982. Neither phase was implemented by the city.

Public participation in the 1985 comprehensive planning efforts has resulted in an up-to-date, useable comprehensive plan, which will benefit both the public

and private sectors in Dillingham. The 1985 update to the City of Dillingham Comprehensive Plan assimilates existing, pertinent information, revises population projections, assesses the local and regional economy, sets community-based goals and objectives, includes the most recent land use maps, and offers a set of recommendations. There are several sources which supplement this update of the comprehensive plan and can be referenced for further detail. Summary descriptions of some of these references can be found in Appendix A of the supplementary document of the comprehensive plan.

- o City of Dillingham Comprehensive Plan, Alaska State Housing Authority, (1971);
- o City of Dillingham Comprehensive Plan Update: Phase I, State of Alaska Department of Community and Regional Affairs, (1981);
- o City of Dillingham Comprehensive Plan Update: Phase II, Land Use Plan, State of Alaska Department of Community and Regional Affairs, (1982);
- o Dillingham Port/Harbor Development Study, City of Dillingham, (1985);
- o Dillingham Alaska Small Boat Harbor Improvements, Corps of Engineers, (1985);
- o Preliminary Flood Insurance Rate Map, City of Dillingham, Alaska Bristol Bay Division, Federal Emergency Management Agency, Federal Insurance Administration (1981);
- o Dillingham Airport Master Plan, Alaska Department of Transportation and Public Facilities, (1985);
- o Bristol Bay Coastal Management Program, Bristol Bay Coastal Resource Service Area Board, (1984);
- o Bristol Bay Development Study, Alaska Department of Community and Regional Affairs and the Bristol Bay Native Association, (1984);

- o Bristol Bay Underdeveloped Fisheries Study, State of Alaska Department of Community and Regional Affairs, (1984);
- o City of Dillingham, Alaska: Facilities Plan for Wastewater Disposal System, (1979); and
- o City of Dillingham Sewerage Facilities Plan, (1983).

Through goal and policy statements, the comprehensive plan reflects community desires for economic development and land use. When we speak of economic development in Dillingham, as in many communities in Alaska, subsistence fishing and hunting, important aspects of the local economy, are included. This update to the Dillingham Comprehensive Plan includes goals and policies for the basic services supporting residential, commercial and industrial development. These include utilities, transportation and community facilities.

The format of the comprehensive plan is a 24" x 36" sheet with a land use map, and a supplementary guide. The foldable 24" x 36" sheet provides long range direction for Dillingham. It focuses on the major community issues for coordinating the development activities of the city, private sector and other government agencies. It is a document which stands on its own and whose goal and policy statements will provide guidance to the Planning Commission and City Council in land use decisions.

In addition to the foldable poster sheet, the comprehensive plan update includes a supplementary document. The supplementary document contains a physical description of the Dillingham area, updated population projections, an economic overview of Dillingham, a recap of goals and policies relating to physical, economic, and social community development, a land use plan, and some recommendations. Also included in the supplementary document are summary

descriptions of references to be utilized in conjunction with the comprehensive plan.

Understanding the role a comprehensive plan plays in the development of a community sometimes is difficult. The following section is an overview of comprehensive planning in general and of the planning process in Dillingham in particular.

What is a Comprehensive Plan?

A comprehensive plan is a guidebook for the general public and government officials to utilize in achieving orderly and coordinated development of the entire community. A comprehensive plan, through its goals and policies, provides a framework for making decisions regarding physical, social, and economic development, both public and private.

A formally adopted comprehensive plan is a public declaration of the general policies which guide, not bind, actions of the city council. In Alaska, first class cities such as the City of Dillingham legally are required to adopt a comprehensive plan and review it every two years.

A comprehensive plan is based upon some key functional areas of community planning concerned with major public facilities and the services designed to support community development. These key functional areas include economic development, land use, utilities, transportation, and community facilities. The general format of a comprehensive plan includes a document of text, goal and policy statements, charts, graphs and maps. Recommendations for plan implementation are often included in a comprehensive plan.

Planning in Alaskan Communities

In Alaska, planning is a legal function vested in municipalities, boroughs, and cities. Alaska Statutes Title 29 specifies that planning powers are mandatory for certain entities including first class cities in the unorganized borough such as the City of Dillingham.

The entities that perform the functions of planning and platting for the city are the city council and planning commission. The mayor appoints members of the planning commission from a list of candidates recommended by the city council. The planning commission is both an advisory and regulatory body. As an advisory body, functions of the planning commission include preparing and recommending to the city council a comprehensive plan, a subdivision ordinance, and, if applicable, a zoning ordinance and official map. Once the city council enacts these recommendations into law via ordinance, both the planning commission and city council, as regulatory bodies, implement these ordinances.

One of the primary advisory functions of the planning commission is to prepare and recommend a comprehensive plan to the city council. The city council must adopt a comprehensive plan based upon the recommendations of the planning commission but may modify the plan. Every two years the planning commission must review the comprehensive plan and present recommendations based on the review to the city council.

Although there are numerous benefits for a community with an up-to-date, useable comprehensive plan, it is important to understand some of the limits of a comprehensive plan. A comprehensive plan by itself does not control where growth occurs. Goal statements within the comprehensive plan set the basic

direction for community activities, and policy statements establish the interrelationships among various socioeconomic forces affecting Dillingham's physical development. Means other than goal and policy statements are meant to implement the comprehensive plan.

Dillingham already has some comprehensive plan implementation measures in place such as a subdivision ordinance. Other controls Dillingham may want to consider are performance standards which can promote compatible land uses.

Although Dillingham does not have zoning, zoning is one way to implement the goals and policies stated in a comprehensive plan. Zoning is often seen as an end in itself, but it is meant to be a dynamic means of addressing a community's development concerns. The purposes of zoning are:

1) Protect the public health and general welfare.
2) Provide for orderly development.
3) Lessen street congestion.
4) Promote fire safety and public order.
5) Prevent overcrowding.
6) Stimulate systematic development of transportation, water, sewer, school, park and other facilities.
7) Encourage energy efficiency.

Zoning may not be appropriate for Dillingham because of the need for increased planning staff it imposes. Implementing the comprehensive plan by a zoning ordinance would require the city to play a formal role in regulating land use. This means the city would need to institute a land use permit system and then provide for enforcement of that system.

Another measure to implement Dillingham's comprehensive plan is capital facilities programming, which can control the general pattern of land use. This comprehensive plan update sets some goals and policies for a capital improvements program (C.I.P.) so that the CIP implements Dillingham's long-range plans for physical, economic, and social development.

In addition to the advisory functions of the planning commission, it performs regulatory functions. As a regulatory body, the planning commission acts as a platting board. A plat is a map or representation on paper of a piece of land subdivided into lots with streets, alleys, and utilities. The planning commission, as platting board, also adopts subdivision regulations. These regulations control the size and arrangement of lots, streets, and utilities.

History of Comprehensive Planning in Dillingham

Numerous studies and four major planning projects have been conducted in Dillingham over the last 15 years. Of these only one comprehensive plan was adopted by the City. In 1971, the Planning and Technical Department of the Alaska State Housing Authority (ASHA) completed a comprehensive development plan. It was a product of ASHA's Community Comprehensive Planning Assistance activities for the City of Dillingham. In cooperation with the community, analytic studies of the social, economic, and physical characteristics of the community were conducted. The physical studies from the 1971 Comprehensive Plan remain applicable and are included in this supplementary document.

In 1982, the State of Alaska Department of Community and Regional Affairs produced a community profile for Dillingham. The profile was two poster sheets which included a facilities and land use map and a comprehensive description of

the community. The Dillingham area was flown and photogrammetric mapping was done. The facilities and land use maps on the community profile, though dated, have proved useful to the city for planning purposes.

The comprehensive descriptions of Dillingham in the community profile included history, climate, environmental considerations, population, economy, land ownership, transportation, health and social services, housing, schools, electricity, heat and fuel, sewer, solid waste, water and communications.

In 1981, the State of Alaska Department of Community and Reginal Affairs provided funding to the City of Dillingham for the updating of its 1971 Comprehensive Plan. The 1981 Comprehensive Plan Update included a community attitudes survey and maps of baseline data. A soils matrix was developed for the area comparing soil types with suitability limitations such as slope, flood potential, drainage, water table and permafrost.

In 1982, Phase II of the Comprehensive Plan Update was conducted by a private consulting firm to update the land use planning element of the 1971 Comprehensive Plan. In the Phase II update, some land classifications were developed, recommendations were made for each classification and some measures were proposed for plan implementation. Although the Dillingham City Council id not adopt by ordinance either the Phase I or Phase II updates, both updates contain environmental and land use information which are important elements of this comprehensive plan.

Methodology of the 1985 Comprehensive Plan

The purpose of this comprehensive plan update for the City of Dillingham was to

work with the community to produce a concise, useable plan. Public participation in the comprehensive planning effort has guided the direction of the plan. A community meeting was held where comprehensive plan issues and goals were discussed. Many Dillingham area residents were kept apprised of progress on the plan through informal meetings and correspondence. A large community meeting called Dillingham Planning Day was held where the draft of the comprehensive plan was presented for discussion. This informal meeting preceded any formal public meeting. Comments from this meeting were incorporated into the draft comprehensive plan. Then the plan was submitted to the planning commission for their review. On October 8, 1985, the planning commission passed a resolution recommending the city council adopt the plan. The comprehensive plan was presented to the city council for review and was subsequently adopted by ordinance, December 5, 1985. Minor modifications to the plan were made according to city council recommendations.

How to Use the Comprehensive Plan

The poster sheet with its goal and policy statements and land use map is designed to stand alone. It will provide the planning commission and city council direction in development and facility location decisions. Through the City of Dillingham's planning office, the poster sheet comprehensive plan can be distributed to the general public and government agencies having an impact upon Dillingham's physical development. A benefit of the comprehensive plan is that it is a means of coordinating private and public sector activities.

The other component of the comprehensive plan, the supplementary document, can be referred to for background information.

CHAPTER ONE

REFERENCES

- Planning Powers of Alaskan Municipalities, Department of Community and Regional Affairs, Division of Community Planning, January, 1982.

CHAPTER TWO

Background

CHAPTER TWO

BACKGROUND

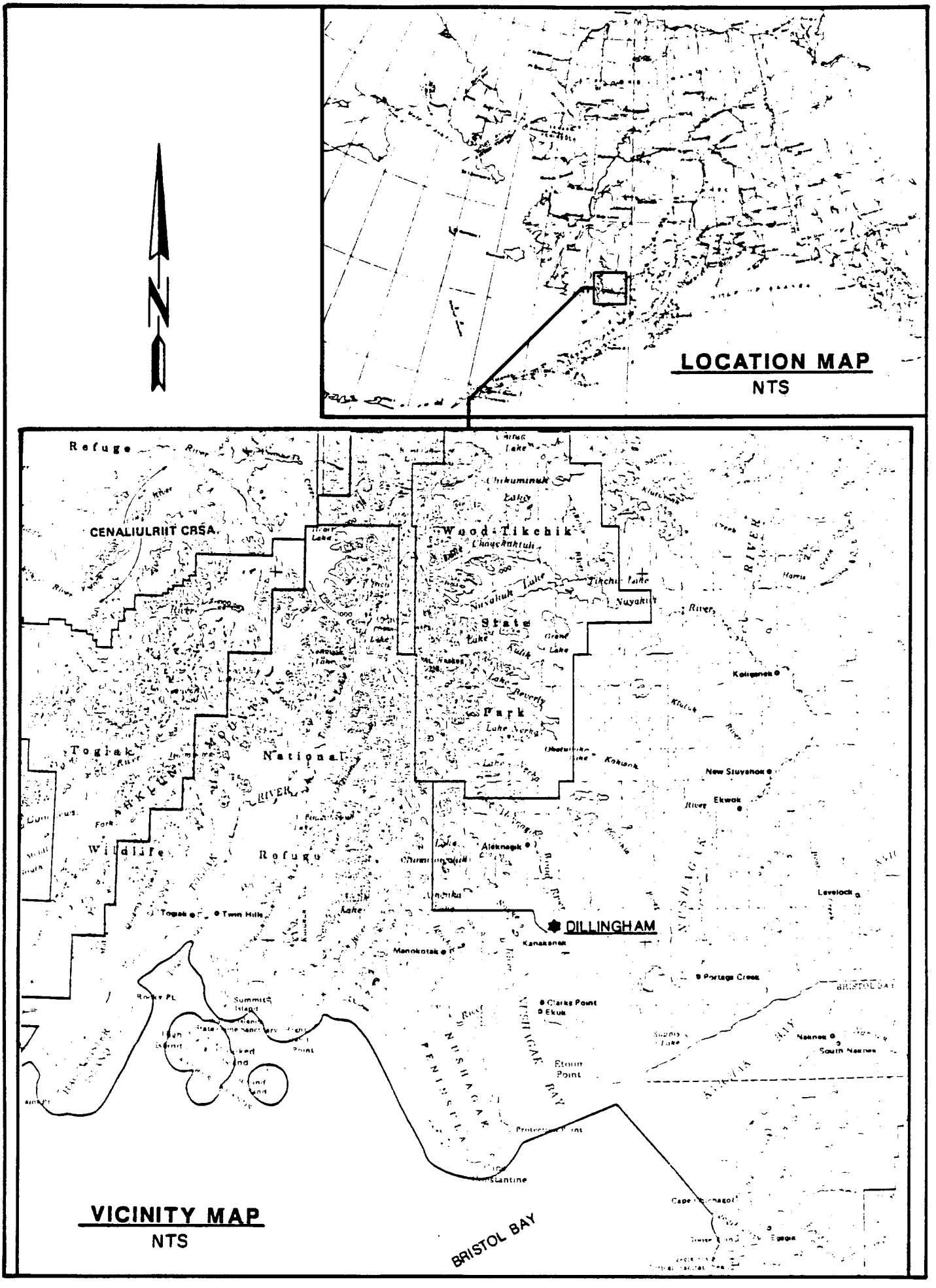
This chapter relates the geographic setting and historical background and development of Dillingham as they pertain to the problems and needs of the Dillingham area. The natural setting also is important to a comprehensive development plan for Dillingham, and this aspect will be covered in Chapter Five--Physical Conditions. The background information in the following sections concerning geographic setting and history are excerpted from the 1971 Dillingham Comprehensive Plan.

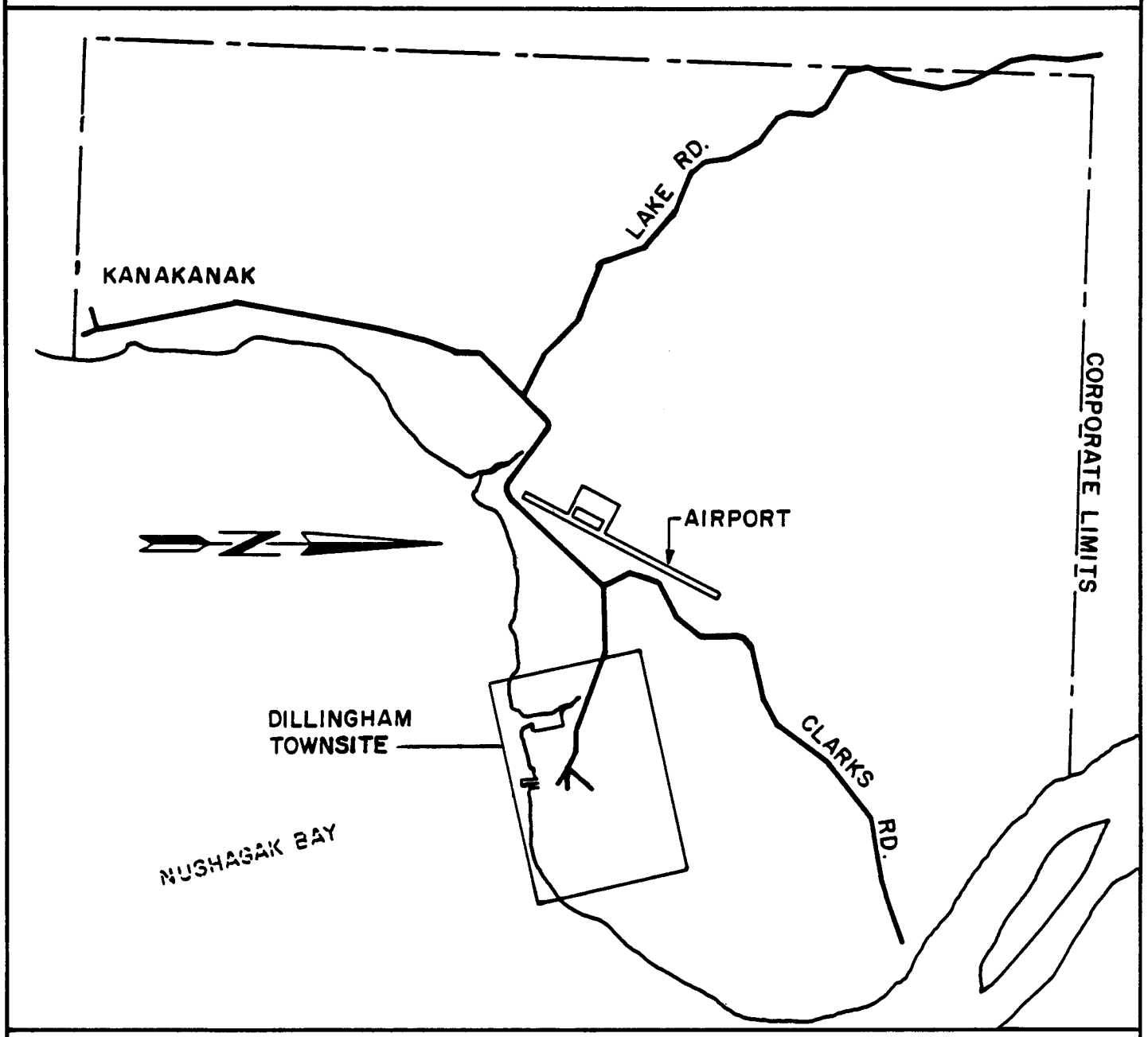
Geographic Setting

Dillingham is located in southwestern Alaska within the Bristol Bay region at the confluence of the Wood and Nushagak Rivers. (See Figures 2.1 and 2.2) The city's location is a product of its orientation toward the sea and rivers for commercial fishing and transportation. Dillingham is 350 air miles southwest of Anchorage and 175 air miles southeast of Bethel; but there are no highway connections. Also, there are no extensive road connections with the Bristol Bay Region. The frontier of twentieth century patterns of geographic organization has not yet reached this far-off corner of the United States which faces Asia on the Bering Sea.

The communities of the Bristol Bay Region, however, have a common orientation toward the waters of Bristol Bay. The activities of most of the people are focused on the bays, rivers and lakes. The region is separated geographically

by two mountain systems surrounding the area, which is generally accepted to be the Bristol Bay Region. The Ahklun Mountains to the north and west and the Aleutian Range to the southeast, together with the Nushagak-Big River Hills to the northeast, form the basin and watershed for the scenic and productive river and lake system that are the nursery grounds for the tremendously valuable Bristol Bay salmon fishery. This region is an area of about 40,000 square miles, which is larger in size than the combined area of the states of Delaware, Connecticutt, Massachusetts, New Jersey, New Hampshire and Hawaii.


LOCATION MAP
NTS
N
Refuge
CENALIULRIIT CRSA
Wood-Tikchik
State
Park
National
Togiak
Wildlife
Refuge
DILLINGHAM
Aleknagik
Koliganek
New Stuyahok
Ekwok
Levelock
Togiak
Twin Hills
Manokotak
Kanakanak
Portage Creek
Clarks Point
Ekuk
Naknek
South Naknek
Etolin Point
NUSHAGAK PENINSULA
NUSHAGAK BAY
BRISTOL BAY
VICINITY MAP
NTS



DILLINGHAM TOWNSITE MAP

NTS

History

The history of the emergence of Dillingham as a regional center is related to a wide variety of past decisions involving both private and governmental courses of actions. An understanding of the "natural" development of the community in the past will shed some light on the existing community needs and upon future development decisions.

Prior to the historic period, it was believed that the Nushagak River was occupied by Eskimos of the Nushagagmiut ethnic group. Although it was felt that there was considerable mixing of the ethnic groups in this region even prior to the first Russian contact, evidence shows that these people inhabited the areas along the Igushik, Wood and Nushagak Rivers, the Tikchik Lake Region, and along the shores of Nushagak Bay.(1) At the mouth of the Nushagak River and along much of the coast of Bristol Bay lived the Aglemiut ethnic group. By several accounts, these people were said to be "warrior people" who fought with the Kuskokwim Eskimos and other people in the Nushagak Bay area.(1) Athabascan Indians were said to occupy the Mulchatna River, a tributary of the Nushagak River about 60 miles north of Dillingham.(1)

Bristol Bay was visited by Captain James Cook in 1778 while he was searching for the northwest passage which he hoped would lead to the Atlantic. He named the Bay in honor of the Admiral Earl of Bristol, and sent an officer ashore at Cape Newenham for reconnaissance. The officer named the cape and claimed the country for King George III. Although this was the first well recorded visit to the Bristol Bay Region by Europeans, Cook himself gives evidence of Russian presence on the Alaska Peninsula and Russian trading in the area north of Bristol Bay prior to 1778.(2)

In 1818, Alexander Baranov, first governor of the Russian American colonies, placed Koraskovsky in charge of an expedition to make a thorough exploration of the territory north of Bristol Bay, and to establish a permanent station on the Nushagak River. At the mouth of the Nushagak River he left Fedor Kolmakof with several men to build a permanent post. The fort was completed that year and was named Alexandrovsk, probably for Alexander Baranov. A census of the colonies shortly thereafter showed three Russian men and two Russian women at the post.(2) Under Kolmakof at Alexandrovsk, the Russians were said to have made peace by 1822 between the various ethnic groups in the area and the Aglemiut (the "warrior people"). By 1822, fur trade could be carried on with no difficulty.(1) At this time, the Aglemiut were greatly reduced in numbers from warfare and they took refuge with Kolmakof's assistance in villages near the redoubt. In this early historic period the attraction of Alexandrovski Redoubt affected the mixing of population in the area. Records indicate that Eskimos from the Kuskokwim region, the Alaska Peninsula, Aleuts and Tanaina Indians from Cook Inlet all visited and lived about the redoubt for various periods of time.(1) A Russian Orthodox mission was established at Nushagak (Alexandrovsk) as early as 1837.(3)

The population in the bay area grew substantially and the fur trade continued after the purchase of Alaska in 1867. One estimate placed the Eskimo population at 1,260 in 1880. (1,3) In 1880, the first census in Alaska reported 178 at Nushagak and 142 people at Kanulik, an Eskimo village two miles to the northeast. In 1881, a meterological station was established at Nushagak by the U. S. Signal Corps.(3) In 1884, the Arctic Packing Company established the first salmon cannery in the Bristol Bay Region at Nushagak.(2) The next year another cannery was erected on the west bank of the Bay approximately one and a half miles below the junction of the Wood and Nushagak Rivers, and the

following year, 1886, a second cannery was built on the west bank about two miles below the first and at the site of the present town of Dillingham. In the meantime, the Moravian Church established a mission near Kanulik in 1886, and called its settlement Carmel. Aside from the Church's missionary activities, the settlement later operated a hospital, an industrial school and started a herd of 88 reindeer. 189 persons were listed for the mission in the 1890 census, but the enterprise was never able to become well established because of the influence of the deeply entrenched Russian Orthodox Church at Nushagak. In 1904, the Moravians ceased operations.(3) A post office was established at Alexandrovsk in 1899 and was called Nushagak.(4)

In the years following the second Alaska Census, the population and economic activity shifted from the east to the west side of Nushagak Bay. The location of the new canneries near Snag Point were responsible for an increase of 219 people at the 1890 census, and by 1900, Carmel and Kanulik completely dropped from the enumeration. In 1901, a new cannery was constructed at Wood River Village, just north of the present town of Dillingham, while Nushagak on the east shore of the Bay took a sudden drop between the 1900 and 1910 enumerations. Between 1908 and 1910, there were about ten canneries in Nushagak Bay. Prior to 1916, a small hospital for natives was operated at Kanakanak which was first run by the Department of Education, of the Department of Interior (5), and later by the Public Health Service. The post office of Dillingham was established on Snag Point in 1904. The town of Dillingham, however, was located three miles to the southwest at what is now locally known as "Olsonville", near the Native Hospital at Kanakanak.

In 1918-19, an influenza epidemic struck Nushagak Bay. By 1920, it was certain the entire permanent population of Nushagak Bay did not exceed 500 persons.

In 1918, the Eskimo village of Kanakanak was said to have a population of about 250, but most of the population died of influenza during the epidemic of 1918-1919.(1) During 1918 the Bureau of Education building at Kanakanak, which was erected as a school in 1909, was enlarged and remodeled as a hospital. The following year construction was started on an orphanage to care for the orphans created by the influenza epidemic. Later, the buildings were converted for use as an industrial school. The census of 1920 recorded only 36 people at Kanakanak.(6) A post office was obtained in 1929 when 177 people were again living in the area. Wood River Village, known earlier as Ah-lek-nug-uk, was also hard hit by the influenza epidemic of 1918-1919. The population of the Eskimo villages along the Wood River was virtually wiped out. People did not begin to move back into the area until the late 1920's at which time families from the Togiak region, the Kuskokwim River, and Nushagak Bay began to populate the shores of Lake Aleknagik. Wood River Village, which may have included as many as 100 permanent residents before the epidemic, now has only a few families.(1)

The present location of the Dillingham townsite was originally occupied by an Eskimo village recorded as "Ah-lek-nug-uk" by Ivan Petroff in the 1880 census (4), and was also known as Chogiung.(1) Dillingham was named in 1904 for William Paul Dillingham, U.S. Senator, 1903-1923. In 1903, Dillingham conducted an extensive tour with his Senate subcommittee through Alaska. This was the first comprehensive investigation of Alaska by a congressional committee, and Senators Dillingham and Nelson became, for many years, the Senate's authorities on Alaska.

About 1944, the post office was discontinued at Kanakanak and the name "Dillingham" was transferred to Snag Point where the Dillingham post office had

been assigned since 1904.(4) (This area on Snag Point is referred to as the "townsite" in following sections of this report.)

In more recent times, the normal gravitation of the population toward the Dillingham townsite has occurred because of the economic activity connected with the canneries and the location of various public services at the site. By 1950, the population was 577. In 1960, the population had declined to 424. A new high school was completed about 1961 and a boat harbor was completed by the United States Army Corps of Engineers in 1962. A sewer system and sewage disposal plant were completed in the summer of 1964. The sewage treatment facility was later shut down and demolished due to the prohibitive costs of supplying electricity to power the facility.(7) The city incorporated an approximately 22 square mile area in 1963 which included Kanakanak and Wood River Village. The 1970 census showed a population of 914 for Dillingham.

In 1971, the Alaska Native Claims Settlement Act (ANCSA) was passed. Section 14(c)(3) of ANCSA mandated that the village corporation, Choggiung, Ltd., transfer land to the City of Dillingham for community expansion and public purposes. The City of Dillingham and Choggiung, Ltd. appointed a land committee to decide which lands should be transferred. This land transfer resulted in approximately 1900 acres being reconveyed from Choggiung to the City of Dillingham. The 1900 acres are included in the full plan of survey awaiting review by the Bureau of Land Management. Part of this acreage actually was transferred to the city for public facilities previous to the 14(c)(3) reconvenyance. With increased land holdings, the City of Dillingham looks toward developing management polices for municipal lands.

CHAPTER TWO

REFERENCES

(1) Alaska Natives and the Land. 1968. Federal Field Committee for Developing Planning in Alaska. Washington, D.C.: U.S. Government Printing Office; and Alaska Diary, 1926-1931. Hrdlicka, Ales, Lancaster, Pennsylvania, The Jacques Cattell Press, 1944, pp 353-379.

(2) Alaska: Past and Present. 1958. Hulley, Clarence C., Ph.D. Portland, Oregon: Binfords & Mort, Publishers; and History of Alaska: 1730-1885. 1960. Bancroft, Huber Howe. New York, New York, Antiquarian Press Ltc.

(3) The Silver Fleece: An Economic Study of the Bristol Bay Region. 1958. Alaska Rural Development Board, Juneau, Alaska.

(4) Dictionary of Alaska Place Names. Orth, Donald J. 1967. Washington, U. S. Government Printing Office.

(5) The State of Alaska. 1954. Gruening, Ernest. New York, Random Houses.

(6) Eskimos of the Nushagak River. 1967. VanStone, James W. University of Washington Publications in Anthropology, Volume 15.

(7) City of Dillingham Comprehensive Water and Sewer Study. Wince-Corthell and Associates. 1974. Anchorage, Alaska. City of Dillingham, Alaska: Facilities Plan for Wastewater Disposal System. Wince-Corthell-Byson-Freas. 1979. Anchorage, Alaska. Conversation with G. Craig Freas, partner Tryck, Nyman & Hayes.

CHAPTER THREE

Dillingham Population

CHAPTER THREE

DILLINGHAM POPULATION

General Overview

The City of Dillingham has had more growth in permanent resident population since 1960 than any other community within the Bristol Bay Region.(1) As shown in Table 3.1 population has grown substantially from 1960 to 1980 after having declined during the 1950 to 1960 decade. Because of the small population base, significant socioeconomic events in the city's history have had major impacts on absolute population size and, in particular, on growth rates. These events are essential to review and consider in projecting future Dillingham population.

Table 3.1

Dillingham Population(a)

1950	1960	1970	1980
577	429	914 (b)	1563

Average Annual Growth Rates

1950-1960	1960-1970	1960-1980	1970-1980
-2.9%	7.9%	6.7%	5.5%

(a) U.S. Bureau of the Census 1950, 1960, 1970 and 1980.

(b) Includes the populations of Kanakanak, Nelsonville, and Wood River Village which were added to Dillingham upon its incorporation in 1963.

The major economic activity of Dillingham, and for the overall Bristol Bay Region, is clearly commercial salmon fishing. During the seasonal fishing season, non-resident fishermen and fish processing workers migrate to the region in numbers that occasionally exceed twice the resident population.(1) Not surprisingly, significant changes in the salmon fishery have had major impacts on Dillingham's economic base and resident population.

The decline in population from 1950 to 1960 is largely attributable to the significant decline in the sockeye salmon harvest during the decade. The annual commercial catch of sockeye salmon for the Nushagak district during the 1950's averaged 873,332 as compared to 2,334,745 in the previous decade.(2) The rapid growth in population from 429 in 1960 to 914 in 1970 was substantially due to the inclusion of Kanakanak, Nelsonville and Wood River Village into the population base when Dillingham was incorporated in 1963.

Dillingham has experienced a true growth period from 1970-1980, with average annual growth at 5.5 percent. This strong increase in population has continued well into the 1980's, as depicted in Table 3.2 below.

Table 3.2

Recent Dillingham Population(a)

	1981	1982	1983	1984 (b)
Population	1670	1791	1896	2004
Annual Growth Rate %	6.8	7.2	5.9	5.7

(a) Alaska Department of Labor estimates for July 1st of each year.

(b) The most recent City of Dillingham estimate (taken December 1984) is 2026.

The growth of Dillingham's population since 1970 has largely been due to the recovery of the sockeye salmon fishery to record levels in the late 1970's and early 1980's. Other major factors contributing to the increase during this period are the expanded presence and activities of federal, state and local government agencies and the importance of Dillingham as a regional service center. All of these factors resulted in Dillingham being the only subregion within Bristol Bay to register a decline in the unemployment rate and a net positive migration rate during the period of 1970 to 1980.(1)

Population Composition

The population structure of Dillingham can be further examined in terms of age and gender distribution, as well as ethnicity. As shown in Table 3.3, U. S. Census Data for 1980 reveal that males represent approximately 52 percent of the population, which is a relatively constant percentage for most subregions within Bristol Bay. This gender ratio also appears to be relatively uniform within each of the age categories. The proportion of Native population of 57 percent in 1980 represents a drop from 63.7 percent in 1970. This was the largest decline in the proportion of Native inhabitants between 1970 and 1980 of any community within the Bristol Bay Region.(1)

Table 3.3[a]

1980 Population by Age and Gender

Gender/Age	0-4	5-9	10-17	18-24	25-34	35-64	65+	Total	Percent
Male	73	83	136	106	167	211	30	806	51.6
Female	79	67	133	109	150	198	21	757	48.4
Total	152	150	269	215	317	409	51	1563	100.0

1980 Ethnic Groups

Ethnic Group	Population	Percent
Alaskan Natives[b]	891	57.0
White	660	42.2
Asian Pacific	4	.3
Other	8	.5
Total	1563	100.0

(a) U.S. Census Data 1980
(b) Defined as Aleut, Eskimo and American Indian

Population Projections

In the past four years several projections have been made for Dillingham's future population. These projections, their sources, and the dates the projections were made are summarized in Table 3.4. Each of these projections were developed by assuming a particular annual aggregate growth rate or combination of aggregate growth rates over time.

Phase I of the Dillingham Comprehensive Plan Update provides a range within which population is expected to grow to the year 1990. The high growth estimate assumes 6 percent annual growth, while the low growth estimate assumes only 3 percent growth. The Phase I and Phase II Comprehensive Plan Updates predict growth initially at 6 percent, declining to 3 percent by 1989. The resulting range is from 2184 to 2749 in 1980, with predicted population at 2450. Further, this population is predicted to increase to 2850 by 1995.

Two recent reports cite additional projections for Dillingham's population out to the year 2000. Both studies (one cited in the Dillingham Airport Master Plan and the other cited in the U. S. Army Corps of Engineers report on Small Boat Harbor Improvements) predict an average annual growth rate from 1985 to 2000 of approximately 4 percent. This rate of growth results in a population of approximately 3500 by the turn of the century.

Table 3.4

Population Projections

Source	1985	1990	1995	2000
City of Dillingham Comprehensive Plan Update:				
- Phase I (High Projection); 11/81	2075	2749	--	--
- Phase I (Low Projection); 11/81	1812	2184	--	--
- Phase I (Predicted Growth); 11/81	2075	2451	--	--
- Phase II; 11/82	2075	2450	2850	--
TRA/Farr, "Dillingham Airport Master Plan," May 1984, Exhibit 7, which cites a TRA/Farr study conducted February 1982	1954	2304	2862	3484
U.S. Army Corps of Engineers, "Small Boat Harbor Improvement Study," 5/85, page 8, which cites an 11/81 socioeconomic report prepared for the Bureau of Land Management, Alaska Outer Continental Shelf Office	1911	2336	2856	3491

Because of the small population of Dillingham, and the fact that any one single significant socioeconomic event could have a major effect on population size and growth rate, any projection of future population more than a few years into the future is inherently uncertain. Thus, for projection purposes, it is useful to isolate the components of population change, and consider the uncertainties in each component, rather than rely solely on aggregate historical growth rates.

According to data provided in the previously cited report on the "Sociocultural /Socioeconomic Organization of Bristol Bay," the major factor affecting population change in Bristol Bay communities from 1970 to 1980 was net migration.(1) From 1970 to 1980, all communities in the region experienced positive natural population increases (the difference between births and deaths) on the order of 20 percent of the 1970 base population. However, during the same period, the majority of communities experienced net population declines due to significantly varying negative migration rates. While Dillingham was very similar to the rest of Bristol Bay communities in its natural population increase over this period (197 compared to a 1970 base population of 914), it was one of a few communities with a net positive migration rate.(3) Its migration rate of 49.5 percent for the decade was more than double the next highest net migration rate in the Bristol Bay Region and, in fact, exceeded that of other regional service centers around the state, such as Bethel, Kotzebue, Barrow, and Nome.(1)

Table 3.5 projects Dillingham's population to the year 2000 based on separate assumptions for net migration and natural population increase. Assuming natural increase remains stable at historical annual rates, the "High," "Medium," and "Low" projections reflect different assumptions concerning the net migration rate (which, as discussed above, is the major source of uncertainty). The "High" projection assumes Dillingham maintains the high rate of average annual net migration that it experienced from 1970 to 1980 (approximately 4 percent). The "Medium" projection assumes 2 percent annual net migration. The "Low" projection assumes zero net migration.

Table 3.5

Population Projections by
Net Migration and Natural Increase Rates

	1985	1990	1995	2000
High Projection(a)	2114	2765	3615	4727
Medium Projection(b)	2078	2488	2979	3567
Low Projection(c)	2037	2213	2404	2612

(a) Assumes 3.84% net migration annual rate and a natural increase annual rate of 1.6%.

(b) Assumes 2.00% net migration annual rate and a natural increase annual rate of 1.6%.

(c) Assumes zero net migration and a natural increase annual rate of 1.67%.

The projected range of 2612 to 4727 in the year 2000 reflects a considerable amount of uncertainty in future migration. In light of Dillingham's expected economic growth and outlook for the salmon fishery, the "Medium" projection of 3567 seems the most reasonable projection within this range. It seems unlikely that as Dillingham moves toward economic stability, it will experience net migration rates in excess of what it experienced from 1970 to 1980 when (a) it was a rapidly growing regional service center, and (b) the salmon fishery was rapidly recovering with record harvests in the late 1970's and early 1980's. Further, with a strong outlook for future salmon harvest,(4) there is nothing to suggest possible net negative migration. A net migration annual rate of 2 percent reflects a stable economy and is more in line with net migration rates of other regional service centers.

CHAPTER THREE

REFERENCES

1) Sociocultural/Socioeconomic Organization of Bristol Bay: Regional and Subregional Analyses, prepared for Minerals Management Service Alaska Outer Continental Shelf Region, August 1984.

2) Alaska Department of Fish and Game, Information Leaflet No. 211, Table 4.

3) Migration Rate = $\frac{\text{Difference Between 1980 \& 1970 Population-Natural Increase}}{\text{1970 Population}}$

4) Alaska Department of Fish and Game, "Preliminary Forecasts and Projections for 1985," Informational Leaflet No. 244.

CHAPTER FOUR

Dillingham Economy

CHAPTER FOUR

DILLINGHAM ECONOMY

Economic Overview

The commercial salmon fishery is unquestionably the mainstay of the Dillingham economy, as it is for the entire Bristol Bay Region, both in the number of people involved and amount of income generated. However, Dillingham's size and role as a regional service center provide it with the most diversified economic structure of any Bristol Bay community.(1) This diversification adds a degree of stability to the highly seasonal nature of the fishing industry.

It is difficult to assess the employment patterns of Dillingham residents and non-residents since current employment statistics are not available specifically for the City of Dillingham.(2) However, in October, 1980, Alaska Consultants, Inc. conducted a detailed survey of employment in Dillingham by industrial sector, covering both permanent resident and transient seasonal workers.

As shown in Table 4.1, commercial fishing and processing is the largest sector of the city's economy, accounting for 255 jobs (31 percent of the 1980 total). Dillingham's role as a regional service center is clear from its 180 government jobs (16 federal government, 44 state government, and 120 local government) and 144 jobs in the service sector. The majority of the service related jobs are associated with three employers, the Bristol Bay Area Hospital at Kanakanak, the Bristol Bay Area Health Corporation, and the Bristol Bay Native Association.

Trade employment accounts for 101 jobs, with transportation, communications, and public utilities accounting for another 96.

TABLE 4.1

Average Annual Fulltime Employment(a)
Dillingham and Immediate Vicinity

Employment Sector	Jobs in 1980	Percent of Total Jobs
Agriculture, Forestry & Fishing	100	12.1
Mining	0	0.0
Contract Construction	34	4.1
Manufacuring (mostly fish processing)	155	18.7
Transportation, Communications, and Public Utilities	96	11.6
Trade	101	12.2
Finance, Insurance, and Real Estate	18	2.2
Service	144	12.4
Government	180	21.7
- Federal 16	-	-
- State 44	-	-
- Local 122	-	-
TOTAL	828	100.0

(a) Alaska Consultants, Inc., October 1980.

These figures undervalue the importance of the fishing industry to the economy of Dillingham because they are based on yearly averages. During the fishing season, as many as 400 fishermen are in Dillingham, and an even greater number of workers are employed in the processing plants.(1) Even considering only yearly averages, a large segment of trade and transportation jobs are directly related to the fishing industry, which results in at least 40 percent of all positions being directly connected to the commercial fishing industry.

As is the case with employment statistics, specific data pertaining to the income and spending patterns of residents and non-residents is not available

for the City of Dillingham. However, the previously cited report on the "Sociocultural/Socioeconomic Organization of Bristol Bay" does provide useful data and analyses for the region as a whole, and the Dillingham Census Area in particular. The most significant findings were:

- o Real income from the Bristol Bay economy, measured in 1980 dollars, is subject to significant variability, due primarily to changing conditions in the fishing sector. Although personal income (adjusted for inflation) increased only 17 percent from $125.9 million in 1970 to $147.7 million in 1980, dramatic annual shifts occurred during the decade because of variability in salmon harvests and prices.(1) During the poor salmon runs and prices of 1972 through 1974, real personal income was approximately 50 percent of 1970 levels. It was not until 1978 that real personal income reached 1970 levels. In 1979, real personal income increased even more significantly due to record salmon harvests and prices.

- o Commercial fishing, processing, and fishery related trade transportation, communciations, etc., account for at least 40% of all average annual fulltime employment in Dillingham.(1) This figure undervalues the importance of the fishing industry to the economy because it is based on a yearly average. During the fishing season, nonresident fishermen and fish processing workers migrate to the region in numbers that occasionally exceed twice the resident population.(1)

- o Compared with commercial fishing, income earned in other sectors is relatively stable. In 1980, the commercial fishing sector accounted for

approximately 65% of total income, while the service and government sectors accounted for approximately 30%. The service sector was the only non-fishing sector of the economy to increase steadily after 1973.(1)

- o Nonresident participation is significant in Bristol Bay, primarily through nonresident laborers and fishermen who migrate to the region for seasonal employment. More than half (53%) of total personal income earned i n 1980 was tied to nonresidents of Bristol Bay. The commercial fishing sector accounts for only 31% of total resident income, down from 65% of total income when resident and nonresident income are combined.(1)

- o Local residents earn less with limited entry permits than non-locals, and the proportion of all permits held by locals is declining. In 1982, non-locals with drift gillnet permits had an average gross income of $42,956 as compared to $32,124 for local fishermen.(1) Although the percentage of Alaskan residents compared to nonresidents with salmon fishing entry permits has held fairly stable since 1975 at around 64%, local residents lost 220 permits between 1975 and 1983, or 8.5 percent of the Bristol Bay permits originally issued (most sold to Alaskan Urban Non-locals.(3) In addition, 21.3% of Bristol Bay natives who were initially issued permits no longer had them in 1983.(3)

- o Spending in the local economy is a small share of total spending by residents and non-residents. Total income leakage (earned in Bristol Bay but spent elsewhere) in 1980 was $113.2 million or 77% of total

income. Residents spent over half their income (55%) outside the region, while nonresidents spend 96% of their income outside of Bristol Bay.(1)

- The above factors--combined with the fact that local spending is primarily for imported goods rather than locally produced goods--result in a small economic multiplier for the Bristol Bay Region estimated between 1.1 and 1.2.(1) The economic multiplier reflects the induced expansion to an economy that results from increased income. A multiplier as low as 1.1 to 1.2, in light of Bristol Bay's immense fishing resource, reflects a significant leakage in the economy.

- The direct and induced effects of economic expansion in the Bristol Bay Region are concentrated in Dillingham. Of the two census areas in the Bristol Bay Region, local expenditures in the Bristol Bay Borough increased (after adjusting for inflation) from $5.9 to $7.1 million for an average annual growth rate of 1.9% from 1970 to 1980. In comparison, real expenditure growth in the Dillingham Census Area increased five fold from $5.2 million to $27.4 million over the same period. This translates to an average annual growth rate of 18.1%. Similarly, resident personal income in the Dillingham Census Area grew from 64.2% of the total regional income in 1970 to 72.4% in 1980.(1)

Economic Outlook

The economic outlook for the City of Dillingham is clearly tied to the long-term viability and stability of the commercial salmon fishing industry.

Although Dillingham, because of its greater economic diversity, is less dependent on the fishery than other communities in Bristol Bay, the commercial salmon fishery is nevertheless the mainstay of the regional economy and consequently the economy of Dillingham.

The commercial salmon fishing industry is very complex and characterized by substantial short-term variability in harvests, prices, fishermen earnings, and processor profitability. This substantial uncertainty largely results from the variable nature of the resource base, the competitive nature of the industry, and an ever changing consumer demand due to changing foreign exchange rates and overall consumer tastes. However, given the long-term pattern of resource availability (in particular, sockeye salmon), strong demand, and the appropriate regulation of the various fisheries by federal and state authorities, the Bristol Bay salmon fishing industry enjoys a fairly long-term stable framework.

Nevertheless, even in the overall context of long-term stability, the past several years have seen some important structural and market changes that will likely continue in the immediate future and affect not only total earnings but also the distribution of earnings.

Structural Changes

In general, recent trends point in the direction of (a) greater processor diversification in the methods and ways of delivering salmon to the world market, (b) increased fishermen independence from traditional canneries, and (c) substantial expansion and diversification in the support services supplied to the fishing fleet.

In recent years, the salmon industry has experienced a trend away from the traditional, shore-based canneries to floating processors. This trend reflects several basic changes in the industry, including the ascendancy of fresh and frozen products in the U.S. and export markets. These "floaters" range from simple buying stations and fish transfer points, to tenders operated by large processing companies, and offer support services such as fuel, ice, and groceries. The floaters can move around Bristol Bay (in and out of Nushagak Bay) in response to varying salmon runs. They often have the capability to process and freeze fish, but canning remains the province of the shore plants, which also provide further fleet support, such as boat repairs.

Many of the large, more experienced shore-based processors have fixed markets and decades of experience in estimating the margin of profit needed at each incremental change in market conditions. They are conservative and cautious in price negotiations and, becaue they deal more heavily in a canned product, have greater flexibility in the location, price setting and timing of the sale. Because of their firm niche in the marketplace, they will continue to be major players in the industry. The industry, however, will be characterized by more diversity and competitiveness.

Market Forces

Since 1979 the total salmon harvest has been at record levels throughout Bristol Bay, including (until very recently) the Nushagak District where Dillingham is the principal base of activity. The six-year period from 1979 to 1984 had an average annual catch of nearly 31 million fish, compared to an annual average of only 14 million for the 25-year period from 1960. In the

Nushagak District, the 1979 to 1984 average annual catch was 6.9 millin compared to an annual average of only 3.3 million since 1960.

A very important characteristic of the annual salmon run and harvest is the high variability from year to year and the difficulty of forecasting. The record high harvest for Bristol Bay was in 1983 when 39 million salmon were caught compared to the record low of only 1.5 million in 1973. Although the Nushagak District, on average, has produced 26.7% of the local Bristol Bay harvest from 1960 to 1984, its proportion of the catch has ranged from a low of 4.3% in 1965 to a high of 51.0% in 1978.(4) Most recent figures show the 1985 catch to be about what was expected, 22 million salmon compared to a forecast of around 20 million. However, the recent catch in the Nushagak District was disappointing, 1.2 million compared to a forecast of 2.6 million.(5)

In the late 1970's and early 1980's, not only were there record salmon harvests, as evidenced above, but market forces were such that record prices were also obtainable for the product. This led to the unprecendented earnings in the industry as discussed earlier. Beginning in 1982, market forces changed and, combined with continued high salmon runs, have brought overall fish values and profitability down from the high 1979 and 1980 levels.

In general, supplies of salmon have been increasing relative to demand for salmon. On the supply side, record harvests in Bristol Bay and increased harvests worldwide reflect increased natural abundance and improved technology in most production areas of the world. On the demand side, the increasing value of the dollar relative to foreign currencies--in particular, the Japanese Yen--combined with some evidence of the softening of Japanese consumer demand

for fish consumption, have tended to reduce demand. These market factors, in addition to unprecedented high real interest rates, have eroded both the harvest and processing sectors' profit margins.

That the processing industry in Dillingham, and Bristol Bay in general, is not well was dramatized by several bankruptcies since 1982 of recent entrants who were not positioned to adjust to changing market conditions. Further, current low and risky returns on investment have severly limited private sector investment, and have actually drawn capital away from the industry.

Although market forces have existed the last few years that have resulted in low profit margins in both the harvest and processing sectors, these factors are not necessarily long-term threats to the viability of the commercial fishing industry in Bristol Bay. With an abundant resource base and a strong stable demand, market forces are in place for eventual recovery. Recent evidence of the weakening of the U.S. dollar relative to foreign currencies, increased U.S. consumer demand for fish products, as well as lower real interest rates, are encouraging signs to the industry which, if continued could stimulate recovery.

Dillingham is geographically well-positioned to continue to support the Bristol Bay salmon fishermen and, to some extent, the processing industry. Salmon will, as discussed earlier, continue to be the mainstay of the local economy. The spring fishery for roe herring, in the Togiak vicinity, attracts many fishermen from Dillingham and other Bristol Bay communities, but most of the sales are made by fishermen to floating processors on the fishing grounds, rather than to Dillingham-based companies. Further, there may be some

potential for a whitefish (i.e. bottomfish) fishery in western and southern Bristol Bay, and other alternative fisheries (e.g. halibut, capelin, rainbow smelt) may also be developed.(6) However, like the herring fishery, these new fisheries would be pursued far from Dillingham, and the products would very likely be delivered to floaters rather than to shore-based plants. Therefore, although the Dillingham economy would benefit from any additional income earned by its fishermen in new fisheries, the capture of part of the value added by the processing sector would be more difficult.

In sum, despite Dillingham's greater economic diversity than other communities in Bristol Bay, the commercial salmon fishery is nevertheless the mainstay of its economy. Because of substantial nonresident participation in the fishing industry, and significant spending by residents outside the region, there is considerable economic leakage of total income from the economy. Recent structural changes in the fishing industry have taken place, moving towards increased diversity and competitiveness. Many market uncertainties and forces exist in the short-run that should keep profitability low, provide little incentive for private-sector investment, and in fact, may lead to capital being drawn away from the industry. However, basic market conditions exist for long-term stability, and with increased marketing to domestic and foreign markets, could lead to substantial growth.

CHAPTER FOUR

REFERENCES

1) Sociocultural/Socioeconomic Organization of Bristol Bay: Regional and Subregional Analyses, prepared for the Minerals Management Service Alaska Outer Continental Shelf Region, August 1984, p.340.

2) The Alaska Department of Labor keeps statistics only for the Dillingham Census Area on a monthly basis for non-agricultural workers, which excludes most persons engaged in fishing.

3) Commercial Fisheries Entry Commission (CFEC).

4) Alaska Department of Fish and Game, Preliminary Review of the Bristol Bay Salmon Fishery, November 1984.

5) Daily News-Miner; Fairbanks, Alaska; July 21, 1985; p.A-8.

6) Bristol Bay Underdeveloped Commercial Fisheries Potential, State of Alaska Department of Community and Regional Affairs, 1984.

CHAPTER FIVE

PHYSICAL CONDITIONS

The physical conditions of an area set the limits for human settlement and land use planning. Features of the physical conditions which are reviewed here for their implications on land use planning are: soils, natural hazards, and water supply. This chapter is a synthesis of the information in the 1971 Comprehensive Plan and the Comprehensive Plan Updates: Phase I and Phase II, (1981 and 1982). Maps illustrating the suitability of soils for development can be referenced in the 1971 Comprehensive Plan. The soils matrix included in this chapter, which is to be utilized for deciding the suitability of a tract of land for development, is from the Comprehensive Plan Update: Phase I, (1981).

Soils

The City of Dillingham was once covered by glaciers, and the topography of the area is characteristic of areas where deposition by continental glaciers occurred. The land within the city limits is mostly rolling hills with many irregularly shaped moraine knolls and ridges separated by flat, wet lands and muskeg. Here the deposits from the retreating glaciers interrupt the stream drainage and result in formation of many small lakes and ponds in association with the wetlands. The upland moraine hills are mantled by a thick layer of silty, wind-laid material called loess. This material is a mixture of silt blown from unvegetated flood plains and hills adjacent to the melting glaciers, and volcanic ash from the Aleutian Range to the east and south. Beneath this

mantle of loess, the substratum is mostly a coarse grained sand and gravel type of material.

The soils within the city and the region may be interpreted in many ways which are related to land use planning decisions in the area.(1)

Soil suitability is a very important factor for consideration in the planning process. Together with the location of hazard areas such as flood plains, it is probably the single most governing factor for the location of future growth in the Dillingham area. The characteristics which determine soil suitability are also those which contribute heavily to the cost of development. In many cases, factors such as poor drainage, high water table, severe slope, potential flooding, and permafrost may even preclude development in an area.(2)

The soils or land types which are mapped in the Dillingham area have many characteristics within the soil profile which determine the soil series. These characteristics are determined by such things as climate, age, and the parent material. The primary characteristic which determines a soil's suitability for building development in Dillingham, however, is the drainage within the soil profile itself. Three categories of soils and land types include: 1) buildable soils, 2) marginal soils, and 3) poor building soils. A brief description of each category follows.

Buildable Soils:

The buildable soils category includes the Aleknagik series and all of the Kanakanak soil series except for a small percentage. These soils cover about

CHAPTER FIVE

Physical Conditions

37% of the area covered in the soil survey of the Dillingham area, and the location and distribution of these soils will have a significant impact on the future land use patterns in the area.(3) All of these soils are well drained and the gravel substratum makes a good to excellent material for road fills, subgrades and foundations. The drainage properties of these soils enable the proper functioning of individual septic tank disposal systems, and streets can be constructed with relative ease. The silty topsoil layer, however, is a poor material for road fill or embankments and is fair to poor as a road subgrade or foundation for structures. The silt layer ranges from 24 to 42 or more inches deep. In most cases, this silty layer does not pose a great building limitation, but in some spots the silt may be much deeper than the general 42 inch depth and there could be some building problems. Another factor is that the depth to the gravel material may be greater under the Kanakanak soils than the Aleknagik soils.

In the buildable soil category, the slopes of the Aleknagik and the Kanakanak soil series range from nearly level to 20%. The Kanakanak soils over 20% slope were excluded from the buildable soils category because in most cases it is not economically feasible to build on these areas. The steeper slopes in these series would also be more expensive to develop, but due to the limited amount of well drained land, it may be more feasible to develop this land for uses such as low density residential development rather than draining large areas of wet soils.

Marginal Soils:

The Nushagak soils cover about 12.6% of the soil survey and generally occupy

the lower slopes of the moraine hills and ridges between the areas of Aleknagik or Kanakanak soils on the hills and Salamatof soils in the depressions. The primary limitation of this soil for building development is that it is poorly drained. The water table is always close to the surface and the soils generally remain frozen until midsummer. This soil is placed in the marginal building soil category because it would be possible to artificially drain these areas. After drainage, the soil properties area like those of the silty material in Aleknagik soils and the Kanakanak soils. The silt, however, is only fair to poor as a road subgrde or for foundation for structures, and the depth to gravel would not generally be predictable.

The Nushagak soils range in slope from nearly level to 12%. The steeper areas where this soil is present may possibly be more easily drained than the level areas. Also, in some areas, it may be possible to block off the seepage of water from higher wetlands, thus allowing the natural drainage of the wet Nushagak soils. In any case, the successful use of the Nushagak soils for building development will depend on individual site considerations which are related to economic uses of land and the future land use plan.

Poor Building Soils:

The poor building soils category includes the Salamatof soils and the Hyer soil series. The Salamatof soils which cover about 45% of the area of the soil survey are the most extensive soils in the Dillingham area. These peat soils occupy nearly all of the low-lying area. The soils are always wet and many small lakes and ponds occur in association with the soil area. Drainage is generally not possible because of their low position, but if drained, the peat

in these bog soils has little value as construction material or as a foundation for roads or structures. The soils are frozen until late summer, but frost does not continue throughout the summer.

The Hyer soil series are also classified as poorly drained peat soils, but here the soils are perennially frozen below 5 to 30 inches. These soils, however, occupy only a small percentage of the soil survey area on steep north facing slopes. In addition to the unsuitability of the peat soil for building development, the slopes of these soils range from 20% to 45%. Also, the only permafrost in the Dillingham corpoate limits is associated with these soils, and there could be engineering problems in the construction of streets across these areas.(1)

Permafrost:

For practical purposes, permafrost has been discounted as a major planning constraint. Dillingham is within the region of discountinous permafrost, and the possibility of isolated pockets of permafrost cannot be ruled out. Local sources report that permafrost was found during work for the Snag Point housing project and in the boggy area north of the small boat harbor.(2)

This evaluation of the suitability of the soils for building development in the City of Dillingham will be a valuable planning tool in the determination of future land use. Many other factors will be usesd in the final determination of future land uses, but the consideration of soils which are suited to building development will be a primary component. This factor alone could mean the difference between the efficient and orderly growth of Dillingham as a

regional center in Bristol Bay, or stagnation because of expensive land development in unsuitable areas. In any case, poor soils and slope do not preclude the possibility of special forms of development which are designed to accommodate the natural liabilities of the area. With enough financial investment in filling land or improving a structure, it is possible to build successfully almost anywhere. The important factor here is that public and private cost of building on unsuitable soil types will most likely be high while, at the same time, more suitable areas are available.(1)

To analyze soils characteristics a matrix and a suitability map were prepared as part of Comprehensive Plan Update: Phase I. The characteristics used for this soils suitability analysis include slope, flood potential, drainage, water table and permafrost. Bearing capacity, which is usually an important factor in the evaluation of soils prior to development was not utilized because the data provided by the Soil Conservation Service did not correspond to the required depths of footings for new structures. Soil Conservation Service data is limited to a depth which generally does not exceed 60 inches.

The data used to evaluate each soil type such as degree of slope, depth of water table, presence of permafrost, and susceptibility to flooding was taken directly from the 1965 Dillingham Area Soils Report prepared by the U.S. Department of Agriculture Soil Conservation Service.

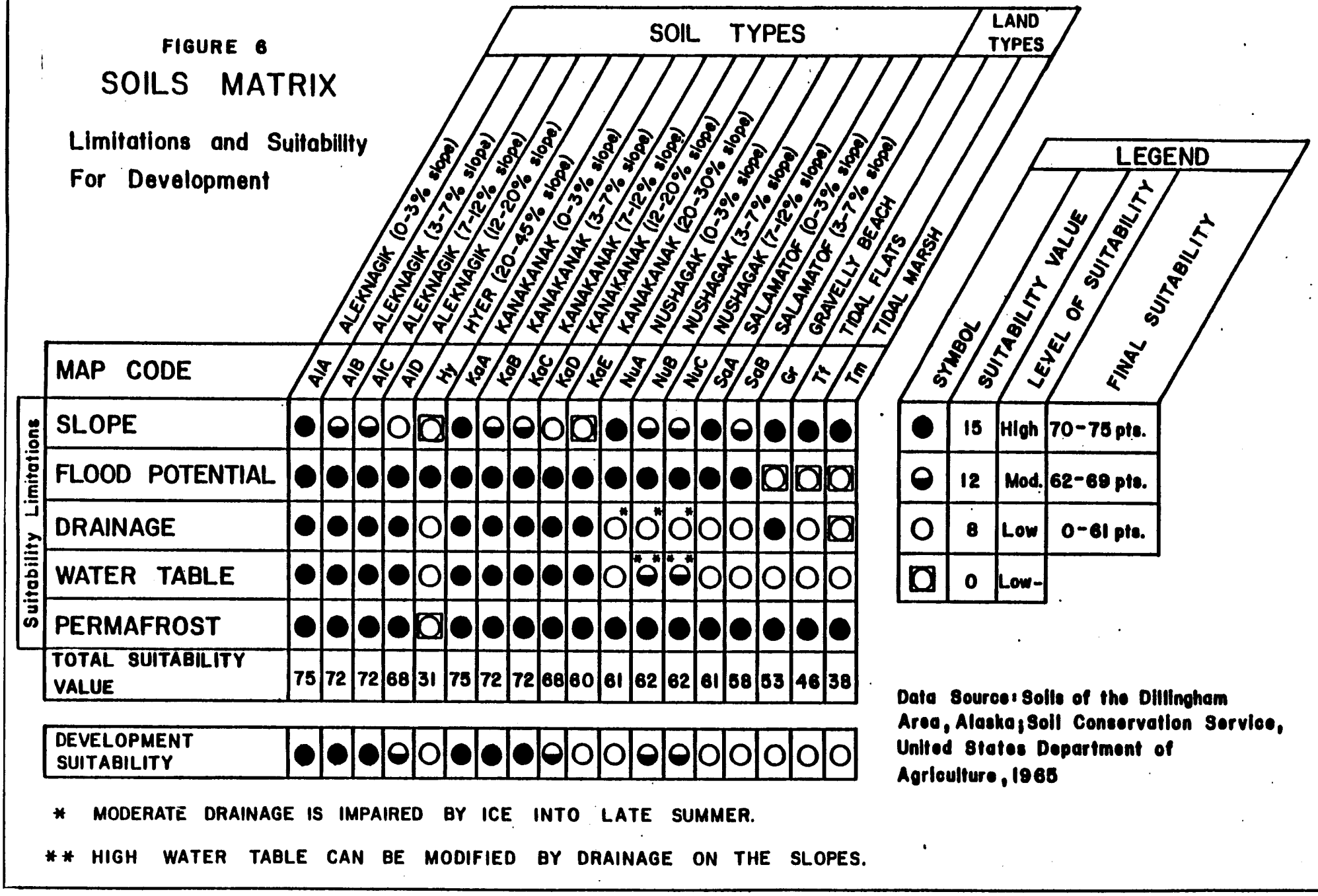
The matrix, which served as the basis for the suitability map, was prepared by assigning a value to each characteristic according to the suitability of the soil based on the limitation of that characteristic alone. Limitations of a low magnitude received a higher point scale designation indicating high

suitability. Those factors which occur in varying degrees, such as slope and depth of water table, were split into ranges of limitation. These ranges were assigned appropriate weight values for their high, moderate, low or low minus suitability for development. The total point value of each soil type was then used to determie soils development suitability whether it be high, moderate or low.(2)

FIGURE 6

SOILS MATRIX

Limitations and Suitability For Development



Data Source: Soils of the Dillingham Area, Alaska; Soil Conservation Service, United States Department of Agriculture, 1965

* MODERATE DRAINAGE IS IMPAIRED BY ICE INTO LATE SUMMER.

** HIGH WATER TABLE CAN BE MODIFIED BY DRAINAGE ON THE SLOPES.

FIGURE 5.1

(City of Dillingham Comprehensive Plan Update Phase 1, 1981)

Topography and Drainage(3)

Consistent with its geological history, the topography of Dillingham is mainly a mixture of wet lowlands, gentle hills and moraine deposits. There are only a few areas with slopes too steep for development. Most noteworthy are the steep coastal bluffs that extend from the Townsite to the end of Wood River Road. These steep-sided watefront slopes are erosion-prone, offer poor access and limit the feasible sites for development of marine transportation facilities. Apart from these areas, slopes are not a major planning constraint. In fact, areas of moderate slope generally reflect favorable surface drainage and soils conditions characteristic of moraine deposits.

Surface drainage is governed mainly by precipitation rates, topography and soils. At Dillingham, the mean annual precipitation is about 26 inches. Where the topography is relatively flat, surface drainage is gradual. Cool air temperatures also retard evaporation.

There is a close correlation between surface drainage and soils conditions. Generally, the flat lowlands tend to be poorly drained muskegs with deep accumulations of peat; surface runoff collects in numerous small lakes and ponds, often without visible inlet or outlet. The level areas of Nushagak soils typically have high water tables. In contrast, the sloped moraine deposits usually feature superior surface drainage and soils conditions.

There are no major river systems that flow through the City area. The two main local drainage systems are Squaw Creek which drains into Nushagak Bay south of the airport and Scandinavian Creek which empties into the Bay at the small boat

harbor. There is some flood hazard associated with each of these streams and that matter is discussed below under natural hazards.

These topographic and drainage conditions reinforce the recommendation that development should be directed to the upland moraines with superior soils conditions. Development is not advisable for poorly drained lowlands or flood hazard areas and it is recommended that, depending on ownership status, such areas be classified as rural, residential or open space. Any development in flood plains should comply with the standards of the City's flood plain ordinance.

Natural Hazards

It is important to emphasize at this point that natural hazards as well as soil suitability are limiting factors on development and both should be considered to determine the suitability of any one site for development.(2)

The two chief natural hazards to be considered at Dillingham are floods and erosion. Under the National Flood Insurance Program, the flood and erosion prone areas have been mapped in detail. This information is available as part of the flood plain management study and as part of the mapped data for the Comprehensive Plan Update: Phase I. The City adopted a revised flood plain management ordinance in September 1982 to satisfy the requirements of the National Flood Insurance Program.

The major areas of concern for floods are the lowlands immediately west of the Dillingham Townsite which are subject to flood from an unfavorable combination

of tides, offshore winds and storm surges. Flood hazard is highest when fall storms coincide with high tides. This exposure to flood hazards is an important constraint on town development since it limits the available options for water-related development in a settlement whose economy is heavily dependent on efficient marine transportation and commercial fishing facilities. This problem is compounded by the fact that the elevated bluffs which are above flood level afford poor access to dock facilities for transfer of marine shipments. Also, these coastal bluffs are exposed to the erosive force of the same storm tides that cause floods in coastal lowlands.

The most obvious erosion area in the Dillingham area is the shore on Nushagak Bay which fronts the Dillingham townsite. As high tides occur, waves cut in to the toe of a bluff fronting the townsite. It is thought, however, that tidal currents may be causing erosion of underwater slopes which in turn reduces the fetch. Therefore, the erosion problem on the shore may be associated with extensive tidal currents rather than waves generated by the limit fetch. There are questions which relate to the economic feasibility of protective measures, but it must be noted that the established erosion pattern may be expected to continue, according to the Corps of Engineers, U.S. Navy Alaska District.

A second erosion area extends from high shores at Kanakanak northeasterly around Nushagak Bay to the entrance to the Dillingham boat harbor. This shoreline is low-lying fine silt overlain by peat and muskeg. Waves from southerly quadrants induce attack to these fine-grained materials which remain in suspension and are carried away by currents in the bay.(3)

Water Resources

Dillingham relies upon groundwater resources both for its community water utility and for individual water supplies. Neither of the main streams, Squaw and Scandinavian Creeks, is considered to have potential for water supply. The waters of the Nushagak and Wood Rivers above Nushagak Bay are too turbid for use as freshwater supplies. Surface waters from lakes are no longer used in any major way for water supply.

The community water system serves businesses and residences in the original Townsite and the Snag Point subdivision, less than half the City's total households. The system is supplied by two deep wells at the Townsite.

The private on-site wells that supply most homes are reportedly of mixed quality. The 1979 Wastewater Disposal System study reports that some are shallow, uncased driven wells, sometimes supplying water of uncertain purity. Others are properly installed wells supplying water of excellent potability. Few of the wells were authorized by permit application and fewer are monitored and reported to the Department of Natural Resources. As a result, the recorded data on well logs and well water conditions are meager for an area that relies so heavily on well water.

Spotty data obtained primarily through tests of the community wells indicates that the groundwater supplies frequently contain high levels of dissolved iron and organic leach. Though sometimes unappealing in color and taste even after treatment, the community water is reliably pure. Presumably, so are other groundwater sources tapped by properly designed and installed well systems in

areas that have not been tainted by inadequately treated sanitary wastes or other impurities.

Protecting the purity of water supplies is a vital public health matter. Contamination may occur due to improperly designed installations, haphazard surface disposal of sewage or faulty performance of onsite sanitary waste disposal systems in cold, wet, fine-grained soils. Widespread contamination problems prompted extension of the sewage collection system to the Windmill Hill area in 1978.(3)

Later in this comprehensive plan are some goals and policies related to conserving water supplies and protecting the quality of groundwater resources.

CHAPTER FIVE

REFERENCES

1) Dillingham Comprehensive Plan. Alaska State Housing Authority, Planning and Technical Department, 1971. Anchorage, Alaska.

2) City of Dillingham Comprehensive Plan Update: Phase I. Dowl Engineers for the State of Alaska Department of Community and Regional Affairs, 1981. Anchorage, Alaska.

3) City of Dillingham Comprehensive Plan Update: Phase 2. Kevin Waring Associates for the State of Alaska Department of Community and Regional Affairs, 1982. Anchorage, Alaska.

CHAPTER SIX

Goals and Policies

CHAPTER SIX

GOALS, OBJECTIVES, POLICIES AND ACTIONS

The Comprehensive Plan Update for the City of Dillingham is designed to achieve planning goals in accord with prevailing natural conditions, community attitudes about future growth and development and planning principles applicable to rural Alaska. It is through goal, objective, policy and action statements that the comprehensive plan guides the physical, economic, and social development of the community.

Definitions

Goal	-	a desired condition or future state.
Objective	-	a directive aimed at a goal.
Policy	-	a principle of decision making for achieving goals and objectives.
Action	-	a specific task or program for achieving goals and objectives.

Generally, the policy statements in this chapter are directed to both the Dillingham Planning Commission and the City Council. The action statements are directed to city officials. A comprehensive picture of Dillingham includes the following goals and objectives which are covered in this chapter:

- Government
- Economic Development
- Land Use
- Transportation
- Utilities

- o Community Facilities
- o Capital Improvements Program.

The order in which these goals and objectives are presented in this chapter does not imply that a priority has been assigned. It is hoped the city will guide the planning commission, city council, and Dillingham residents in setting priorities. The recommendations in Chapter Eight will assist the community in this endeavor.

The Role of Goals, Objectives, Policies and Actions

These statements are not in themselves implementation measures. Approval of this chapter by the City of Dillingham Planning Commission and City Council does not indicate actions will be carried out. A comprehensive plan is implemented through ordinances, programs, budgets, and other actions. Adoption of these goals, objectives and policies is the necessary first step, however, in forming a capital improvements program. The statements to follow are the result of community meetings with Dillingham residents and city officials, and the City of Dillingham Port/Harbor Development Study. In addition, current information from the large body of studies and plans concerning Dillingham and the Bristol Bay area was drawn upon, including the City of Dillingham Comprehensive Plan Updates: Phase I and Phase II.

GOVERNMENT

GOVERNMENT

GOAL: Equitable and efficient provision of public services based upon available resources.

OBJECTIVES:

- Increase the economic benefits to Dillingham from the fisheries industry commensurate with the costs of extending public services to this industry.
- Prepare for several events that will occur in the 1990's: declining state revenues, reapportionment, Native Corporations going public.
- Strengthen local administrative bodies to further establish community self-government.
- Maintain Dillingham's role as a regional service center.
- Distribute the tax burden among all those who benefit from the city's services including Dillingham's resident and non-resident population.

POLICIES:

- Decrease dependence on state funding and assume greater responsibility for generating locally based revenues.
- Promote cooperation between local government and the private sector.
- Facilitate cooperation among the following: Choggiung Village Corporation Council, regional education attendance area (REAA), Southwest Region School District, coastal resource service area (CRSA), City of Dillingham, the Dillingham School District, Bristol Bay Native Association and Corporation, Bristol Bay Area Health Corporation, and University of Alaska.
- Cooperate with state and federal agencies in forming goals and policies regarding regional development.

ACTIONS:

- Incorporate goals and policies for the budget process and capital improvements program into the comprehensive plan.
- Assess tax policies: property tax, sales tax, raw fish tax, and income tax.
- Assess the feasibility of annexation and/or borough formation.
- Initiate and update annually a Capital Improvements Program.

ECONOMIC DEVELOPMENT

ECONOMIC DEVELOPMENT

GOAL: Diversified economic base and continued economic growth which is compatible with and enhances the community's health and safety, and environmental conditions.

GENERAL

OBJECTIVES:

- Attract and support commercial and industrial development that strengthens Dillingham's role as a regional center and assures stable, long-term growth.
- Expand the economic base through policy, planning, and management assistance.

POLICIES:

- Encourage the establishment of businesses and industries which generate local, year-round employment.
- Adopt an industrial growth policy that equally promotes environmental health protection and economic growth.
- Encourage local hire for city jobs and capital improvement projects (within constitutional limits).
- Encourage regular contact with both Choggiung and the Bristol Bay Native Corporation's economic development committee.
- Assess the goals and objectives in the Bristol Bay Coastal Management Plan for applicability to an economic development program.
- Ensure regulatory enforcement by state and federal agencies of environmental health issues generated by industries locating in Dillingham.

ACTION:

- Provide information on technical assistance for businesses having to comply with hazardous materials and waste regulations.

GOVERNMENT

OBJECTIVE:

- Enhance the government sector's contribution to Dillingham's economic base.

POLICY:

- Encourage the location of state and federal offices in Dillingham.

ACTION:

- Work with government agencies to identify amenities required for location decisions.

FISHERIES

OBJECTIVES:

- Increase the share of economic benefits derived from the Bristol Bay fishing industry to residents in the Dillingham area.

- Support the fisheries industry through land use and transportation goals and policies.

POLICIES:

- Encourage public/private partnerships in developing satellite harbor sites and fishery support services.

- Encourage the private sector to enter the market for the value-added processing and marketing of local seafood products.

- Encourage the development of alternative fisheries such as halibut, capelin, and rainbow smelt in such a way as to protect the resource for the benefit of local residents.

ACTIONS:

- Promote changes to state tax policies so that the raw fish tax is redistributed from floating processors of communities affected by fishery activities.

- Assess the positive and negative fiscal impacts of a local, raw fish tax to the City of Dillingham, fishermen, and processors.

- Initiate the preliminary design, engineering and site selection process for development of a seafood industrial park.

SUBSISTENCE

OBJECTIVE:

- Maintain the opportunity for continuation of the subsistence lifestyle in the Dillingham area.

SUBSISTENCE (Cont'd)

POLICY:

- o Ensure that land and water uses in subsistence areas are compatible with subsistence activities.

ACTIONS:

- o Identify areas heavily used for subsistence purposes.

- o Maintain public access to subsistence use areas.

OUTER CONTINENTAL SHELF (OCS) OIL AND GAS DEVELOPMENT

OBJECTIVE:

- o If oil and gas explorations and development occur, ensure that they benefit the region's residents and will not adversely impact fish and wildlife populations and habitats.

POLICY:

- o Prepare for the effects of oil and gas development on Dillingham by identifying the potential onshore impacts and ways to mitigate them.

ACTION:

- o Dillingham planning director should meet with the Bristol Bay Coastal Resource Service Area Board to ensure local concerns are conveyed to State Office of Management and Budget, Division of Intergovernmental Affairs.

MINERALS

OBJECTIVE:

- o Support development schedule of the area's extractable natural resources for the greatest long term benefit of the city and which will not adversely impact fish and wildlife population and habitats.

POLICY:

- o Ensure that the potential adverse impacts of mineral development are identified and that mitigation measures are provided.

ACTION:

- o Dillingham planning director should meet with Bristol Bay Coastal Resource Service Area Board to ensure local concerns are conveyed to State Office of Management and Budget regarding permit procedures.

TOURISM

OBJECTIVE:

- o Broaden the local economic base by enhancing the tourism potential in Dillingham.

TOURISM (Cont'd)

POLICY:

- o Encourage the development of the tourism industry in Dillingham.

ACTION:

- o In conjunction with the Dillingham Chamber of Commerce promote Dillingham's tourist potential as Gateway to the Wood-Tikchik Lakes, Snake River and Aleknagik Lake.

LOCAL PRIVATE ENTERPRISE DEVELOPMENT

OBJECTIVE:

- o Encourage the retention and growth of local private enterprise.

POLICY:

- o Support the availability of state, federal and native lands for private development.

ACTIONS:

- o Work with private sector in developing a seafood industrial park by identifying sites and assisting in land acquisition.

- o Co-sponsor private sector economic development roundtables with the Dillingham Chamber of Commerce.

LAND USE

LAND USE

GOAL: Land use practices which accommodate community growth and protect the health, safety and welfare of the community.

GENERAL

OBJECTIVE:

- Provide the opportunity for a variety of land uses which accommodate the diverse needs of residents.

POLICIES:

- Establish a sound planning framework for public and private land use and investment decisions for residential, commercial, and industrial development.
- Encourage land use planning decisions based on development suitability and use potential of lands rather than on ownership status.
- Ensure proposed developments satisfy floodplain, wetlands, and other applicable management standards.
- Establish a framework for cooperative planning with other major local landowners, including Choggiung and Native allotment owners.
- Establish municipal planning policies to guide federal and state decisions about land use, facility siting, and resource management affecting Dillingham.
- Maintain flexibility in land uses and development regulations while conforming with goals and policies of the Comprehensive Plan.

ACTIONS:

- Generate and maintain a land use data bse that includes geographic information, land ownership status, housing distribution, and water and sewer locates.
- Develop municipal management program for public lands conveyed to Dillingham by Choggiung Ltd. pursuant to Section 14(c)(3) of the Alaska Native Claims Settlement Act.

ENVIRONMENT

OBJECTIVES:

- Prevent loss of life and property from natural hazards such as flooding and erosion.
- Preserve quality of water supply, air, and soil.

OBJECTIVES:

- Ensure integrity of fish and wildlife habitats.

ENVIRONMENT (Cont'd)

POLICIES:

- Direct development to areas rated most suitable for construction or to sites with marginal soils that can be made suitable by drainage, fill or other engineering improvements.

- Evaluate proposed developments according to performance standards which include criteria for soils, topography, slope and erosion.

- Guide land development to areas where natural systems are least affected.

- Assess proposed developments for consistency with Coastal Management Plan.

ACTIONS:

- Dillingham planning director should meet with Corps of Engineers, Alaska Department of Fish and Game and the Office of Management and Budget/ Divison of Intergovernmental Coordination coastal management personnel. Result is to ensure Dillingham's land use plan is consistent with wetlands policies and applicable policies in the Bristol Bay Coastal Management Plan.

- Assess development projects for consistency with Dillingham's floodplain ordinance.

GRAVEL AND FILL

OBJECTIVE:

- Encourage the coordination between the city and gravel suppliers, such as Choggiung, in the extraction of gravel.

POLICY:

- Encourage gravel suppliers to meet the community's need for gravel and fill in the most economical way, from the fewest sites, and with the least adverse effect on the environment and natural landscape.

ACTIONS:

- Ensure gravel extraction conforms to state and federal regulations for gravel sites on land that is neither owned by Choggiung nor is a native allotment.

- Record gravel sites on land use map or enter into computer-based geographic information system.

RESIDENTIAL

OBJECTIVE:

- Offer residents a choice of housing opportunities to fit their own lifestyle and economic preferences.

RESIDENTIAL (Cont'd)

POLICIES:

- o Stage the installation of public utilities and services to assure a high level of use and benefit from City expenditures for capital improvements.

- o Promote new developments that are compatible with existing residential land use.

- o Encourage residential development based upon existing and proposed utility services.

  i. Urban Residential - Lands served with community sewer and, usually, water utilities. Suitable for intensive residential use density up to 4 dwelling units per acre.

  ii. Rural Residential - Larger lots for homesites which satisfy criteria of good soils and drainage, freedom from natural hazards, suitability for onsite water and sewer and accessibility.

ACTION:

- o Adopt a municipal capital improvements program to coordinate installation of the basic infrastructure that supports development at higher densities.

COMMERCIAL

OBJECTIVE:

- o Development of a broad range of commercial land use activities in the most efficient manner.

POLICIES:

- o Encourage the clustering of related commercial uses.

- o Encourage marine commercial development near Dillingham Boat Harbor and satellite harbor sites.

- o Encourage commercial development at sites convenient to more populous residential areas.

- o Support the redevelopment and reclamation of underused parcels for commercial uses.

ACTIONS:

- o Work with the private sector to identify underused parcels and buildings appropriate for commercial uses.

- o Assist private sector in identifying suitable sites for commercial activity.

- o Create commercial use district near harbor and satellite harbor sites and define appropriate marine commercial uses.

INDUSTRIAL

OBJECTIVE:

- Enhance industrial potential of the planning area so that it is compatible with other land uses and minimizes negative environmental impacts.

POLICIES:

- Balance the need for industrial sites that fit the community's economic functions with the physical shortcomings of the sites.
- Develop industrial areas that maximize existing infrastructure and services, and secondly, develop new industrial sites where utilities and services can be efficiently provided.
- Locate hazardous materials storage away from areas of dense population.
- Develop a set of performance standards in determining the desirability of development proposals. Appropriate development standards should be applied on a case-by-case, site-by-site basis. Engineering innovation may be required to compensate for poor soils and erosion.
- Support vocational-technical training in the Dillingham area that meets the needs of industry and provides local employment.

ACTIONS:

- Assist in land acquisition and site preparation for an industrial park.
- Inventory existing sites of industrial activity. Identify needs. Select sites appropriate for industrial use and coordinate provision of highways and utilities.
- Support fisheries industry by classifying marine-related industrial sites:
  - i. City dock, cold storage plant,
  - ii. Dillingham Boat Harbor,
  - iii. Waterfront east to Snag Point,
  - iv. Wood River,
  - v. Squaw Creek, and
  - vi. Kanakanak Creek.

TRANSPORTATION

TRANSPORTATION

GOAL: Safe, environmentally sound, and energy efficient movement of goods and people throughout the Dillingham area.

GENERAL

OBJECTIVES:

- o Provide for a transportation system and facilities that keep pace with community development.
- o Develop a comprehensive approach in planning improvements for Dillingham's transportation system.

POLICY:

- o Encourage improvements to the transportation system which support the local and regional economic activity.
- o Work with DOT/PF through the Dillingham Area Transportation Study to undertake a road network planning process to achieve community goals and develop land efficiently.

ACTIONS:

- o City Manager shall ensure city provides input to state and federal transportation development plans.
- o Develop a Capital Improvement Program which implements the goals and policies for the various components of Dillingham's transportation system.

DILLINGHAM BOAT HARBOR

OBJECTIVES:

- o Maintain existing boat harbor and harbor entrance.
- o Serve the needs of the harbor's diverse users: small boat fishing industry, charter boats, supply, recreation vessels and boats.
- o Prevent accelerated shoreline erosion resulting from harbor improvements.
- o Protect the natural resources of the area from harm caused by harbor improvements.

POLICIES

- o Encourage the private provision of marine-related onshore services.
- o Assess harbor improvements with regard to the Bristol Bay Area Coastal Management Plan.

DILLINGHAM BOAT HARBOR (Cont'd)

ACTIONS:

- o Coordinate with Corps of Engineers on harbor operations including minimizing interference of harbor maintenance dredging on fishing season activities.

- o Determine the needed improvements for minimizing erosion of harbor mouth. Include consideration of a harbor entrance gate.

- o Coordinate erosion control with State Department of Transportation and Public Facilities, and Corps of Engineers.

- o Implement necessary operational procedures and plan for improvements that alleviate extreme crowding and reduce the potential fire hazards in the existing harbor.

CITY CARGO DOCKS

OBJECTIVE:

- o Provide for the safe cargo handling and expansion of the cold storage plant activities.

POLICY:

- o Support the ongoing maintenance and periodic improvements of the dock facility.

ACTION:

- o Develop a plan for increasing upland storage utilizing the recommendations in the City of Dillingham Port/Harbor Development Study..

SATELLITE HARBOR SITES

OBJECTIVE:

- o Supplement the moorage space in the existing boat harbor by encouraging the development of satellite harbor sites.

POLICY:

- o Encourage the private development of satellite harbor sites such as Wood River, Squaw Creek, and Kanakanak.

ACTION:

- o Assess need for land acquisition and utility extensions to promote development of potential harbor sites.

AIRPORT

OBJECTIVE:

- Work with DOT/PF to maintain and expand the airport facility to accommodate the needs of its diverse users.

POLICIES:

- Promote airport improvements which reinforce fisheries activities and plan in accordance with harbor improvements and road system.
- Through land use recommendations minimize noise and environmental impacts of airport expansion on adjacent lands.
- Encourage the development of landside improvements for staging fishery air haul operations.

ACTIONS:

- Through city manager and planning director,
  - i. provide input to the Department of Transportation and other agencies involved in the Airport Master Plan, and
  - ii. coordinate comprehensive planning process with the Airport Master Plan to ensure the airport improvements and expansion conform with the goals and policies in the comprehensive plan.
- Develop performance standards for land adjacent to the airport for use in land development decisions.
- Work with State Department of Transportation/Public Facilities to determine the effects of airport improvements or the need for additional utilities and public improvements.

ROADS/PEDESTRIAN FACILITIES

OBJECTIVES:

- Encourage public and private sectors to work together in providing the community with a serviceable road system.
- Facilitate safe and efficient traffic patterns in the downtown business district.
- Assure the transportation needs of children, the elderly, and handicapped are adequately met.
- Provide for pedestrian safety.

POLICIES:

- Integrate safe pedestrian circulation into road networks. Walkways should serve both community and recreational purposes.

ROADS/PEDESTRIAN FACILITIES (Cont'd)

POLICIES:

- Require public and private developers to provide rights-of-way for future road construction.

ACTIONS:

- Establish design standards to ensure safe, attractive and well-defined walkways.
- Through the Dillingham Area Transportation Study regularly prepare and regularly update an area road system master plan:
  - i. locate new highway and utility corridors,
  - ii. protect, and facilitate access for fire, police, school bus, and other services,
  - iii. provide for increased fish-haul operations between the airport and boat harbor and satellite harbor sites.
- Develop a traffic circulation and parking study.
- Assess the feasibility of road service districts.

PUBLIC UTILITIES

PUBLIC UTILITIES

GOAL: Adequate, reliable public utilities which serve the most residents with the least cost to the users.

GENERAL

OBJECTIVES:

- Promote the health, safety and social welfare of the community through public utility services.
- Maintain and improve existing public utility services to efficiently meet present and future demands.

POLICIES:

- Extend public utilities service to the greatest number of people at the lowest public cost.
- Encourage the conservation and efficient use of energy, as well as the development of cost effective renewable resource-based energy systems that will not adversely impact fish and wildlife populations and habitats.
- Guide development to land areas near existing sewer and water lines.
- Encourage higher density development in areas either served by community water and sewer or designated for community utility service.

ACTIONS:

- Prioritize utilities projects and implement them in a capital improvements program.
- Plan for operations and maintenance of projects.

WATER

OBJECTIVES:

- Protect quality of water supply and groundwater resources.
- Encourage conservation of water supplies.

POLICIES:

- Encourage the higher density development of areas now served by the community water system or designated for community utility service in the future.
- Limit development densities in rural areas not planned for community water and sewer to below thresholds at which they deplete or contaminate groundwater supplies.

WATER (Cont'd)

ACTIONS:

- Ensure city water complies with Alaska Drinking Water Standards through routine water quality monitoring.

- Work with Department of Environmental Conservation to monitor on site septic system conformance by reviewing development proposals for conformance to DEC standards.

SEWERAGE SYSTEM

OBJECTIVES:

- Provide for sewage treatment and collection to ensure the health of the community and to conform to state and federal standards.

- Minimize effect of on site septic systems on water wells and environmental conditions.

POLICIES:

- Expand sewerage system where warranted by high densities or poor soils.

- Install community sewer systems where warranted by high densities or soils conditions to ensure wells are not contaminated.

- After sewage treatment facility is constructed, encourage private sector competition in regard to pumper services.

- Ensure development proposals that require water and sewer facilities have been approved by Department of Environmental Conservation.

ACTIONS:

- Construct sewage treatment facility.

- Ensure wastewater treatment process meets variations in summer and winter flows.

STORMWATER DRAINAGE

OBJECTIVE:

- Expand existing stormwater drainage system to further reduce surface runoff problems and improve efficiency of sewage system.

POLICY:

- Require future developments to consider stormwater drainage in grading plans.

ACTION:

- Maintain efficiency of stormwater drainage systems.

ENERGY

POLICIES:

- Include the needs of potential industrial and domestic consumers in energy plan.
- Encourage and investigate the feasibility of alternative energy systems which may lower energy costs and improve reliability.
- Encourage the Alaska Power Authority and Nushagak Electric to assess the feasibility of alternative forms of electricity generation.

ACTION:

- Identify areas where alternative energy resources such as hydro, peat, natural gas, geothermal, wood, and wind may be available to meet local energy needs.

COMMUNITY FACILITIES

COMMUNITY FACILITIES

GOAL: Adequate, affordable, and accessible community facilities.

GENERAL

OBJECTIVE:

- o Maintain existing community facilities and expand where warranted.

POLICIES:

- o Plan for the clustering of central public offices and facilities for efficiency.
- o Encourage the use of existing undeveloped municipal land and renovation of existing facilities for expansion of central public offices and facilities.
- o Develop a set of criteria for upgrading city offices and service facilities, and include in C.I.P. process.

EDUCATION

OBJECTIVE:

- o Provide a broad choice of educational, vocational/technical, and recreational opportunities to all segments of the community.

POLICIES:

- o Maximize the use of school facilities for outdoor and indoor recreation for the community at large.
- o Encourage coordination between the Dillingham School District, Southwest Regions School District and the City of Dillingham in developing a plan for future school facility needs.
- o Work with the University of Alaska--Bristol Bay Rural Education Center, to assess feasible sites for a post secondary, vocational/technical training facility that serves residents of the city and region of Dillingham.
- o Encourage the clustering of educational and cultural facilities for efficiency of use.

ACTION:

- o Utilize comprehensive plan information and goals and objectives in working with the Dillingham School District in selecting some potential school sites.
- o Assist in the site selection for a University of Alaska vocational/ technical training facility through land acquisition and/or land assembly.

PARKS AND RECREATION

OBJECTIVES:

- o Develop and maintain a neighborhood oriented recreation facility and program system.

- o Increase and enhance youth facilities within the community.

POLICY:

- o Reserve some municipal land for public recreation and open space.

ACTIONS:

- o Classify areas which are poorly suited for intensive development, such as wetlands or floodplains, as public open space.

- o Develop a park plan which includes standards for community park and recreation facilities, identification of areas for immediate and future facility location, priorities for each facility, and the ability of the community to pay for those facilities.

COMMUNITY HEALTH

OBJECTIVES:

- o Upgrade and enhance the law enforcement and fire protection facilities.

- o Promote cooperation with the state's hazardous waste program.

POLICY:

- o Develop and implement educational programs and activities designed to develop local expertise in promoting sound hazardous materials management.

ACTION:

- o Perform an evaluation to determine the types and quantities of hazardous materials/wastes produced and handled in Dillingham and current management practices.

CAPITAL IMPROVEMENTS PROGRAM

CAPITAL IMPROVEMENTS PROGRAM

GOAL: Establish a Capital Improvements Program (C.I.P.)

OBJECTIVE:

- Institute a Capital Improvements Program (C.I.P.) to help implement the goals and policies of the Dillingham Comprehensive Plan.

POLICIES:

- Give priority to critical life, health and safety projects that generate local jobs.
- Establish a framework that assures projects are executed according to established priorities, ensures projects are gauged to the community's ability to pay for them, and allows city officials to coordinate projects for efficiency.
- Coordinate the C.I.P. with long range economic, fiscal energy and social planning.
- Develop a long-term capital improvements program that stages the installation of community facilities in accord with residential, commercial and industrial expansion needs, and Dillingham's land use policies.

ACTIONS:

- Develop a six-year capital improvements program that is updated annually and includes project costs, timing, sources of financing, status of plans, and effects on the city's operating budget.public shall be invited to participate in forming the C.I.P.
- Integrate C.I.P. planning into the community budget workshops.
- C.I.P. shall be subject to Planning Commission review and recommendation to City Council review and approval.

CHAPTER SEVEN

Land Use Plan

CHAPTER SEVEN

LAND USE PLAN

A land use plan is a general guide to future land use patterns. The City of Dillingham Comprehensive Plan Update: Phase 2 comprises an important part of the land use plan for the 1985 Comprehensive Plan Update. Pertinent segments of that plan are included here.

Other components of the land use plan are the land use goals and policies found in Chapter Six and on the poster sheet, and the updated land use map. At the time of the 1985 update to the comprehensive plan, land surveys necessitated by the ANCSA 14(c)(3) reconveyancing of land from Choggiung, Ltd. to the City of Dillingham were being conducted. It is estimated that the much needed maps of the Dillingham townsite and area will be complete by early 1986. For land use planning purposes, it is important that these maps, along with utilities overlays, be appended to the comprehensive plan update, when they are completed.

The land use plan is a general picture of desirable future land use patterns. If it is adopted as official city policy, it can direct public and private decisions about land use toward an orderly development pattern. The plan should provide consistent policy direction to the city's ongoing decisions about land use and community facility siting. In this way, the plan can help reduce the costs and inconveniences of piecemeal development.

Future land use is not always determined by current land ownership. Some sites that are owned by the city are classified for residential use because that

appears to be the best ultimate use of those sites. The city can plan to dispose of these lands at the appropriate time. Conversely, some private property is proposed for public use classification, to be acquired at a future date for some public improvement. Thus, use and ownership status are two different matters, although it often happens that public use sites wind up in public ownership and vice-versa.

Most of the lands classified in the plan for future use and development are vacant at present. In some important instances, however, particularly in the Townsite vicinity, the plan proposes conversion of already developed land to new or more intensive uses. When outdated uses and structures are redeveloped for new uses, the vitality of the central business district and surrounding residential areas is maintained and restored. In practice, this is typically a spotty and erratic process, especially where personal attachments to family homesites and businesses, difficulties in construction finance, financial risk and other obstacle factors can hinder redevelopment. For this reason, the amount of land classified for conversion to commercial and urban residential use exceeds the amount that is likely to be redeveloped by 1995. Primarily, the plan defines those areas of the original Townsite and elsewhere whose location will make them attractive for more intensive use as Dillingham grows.

Residential

Residential development is the most extensive single land use. The residential land use class provides for two levels of density, urban residential and rural residential, and two levels of neighborhood development. The Land Use Plan does not "favor" the urban or rural residential lifestyle. Rather, the

residential plan is designed, first, to offer residents a choice of living arrangements to fit their own lifestyle and economic preferences and, second, to stage the installation of public utilities and services to residential tracts so as to assure a high level of use and benefit from city expenditures for capital improvements.

TABLE 7.1

ESTIMATE OF ADDITIONAL HOUSING AND RESIDENTIAL LAND
DILLINGHAM, 1980-1995

Year	Number of Homes	Low Density Option Number of Acres	Moderate Density Option Number of Acres
1981-1985	171	156	100
1986-1990	125	115	73
1991-1995	133	122	77
TOTAL	428	393	250

Note: Added demand for homes assumes three persons per dwelling unit. The low density option assumes a mixture of 2/3 rural residences (average 1 1/4 acre per dwelling) and 1/3 urban residences (average four dwelling per acre). Moderate density option assumes a mixture of 1/3 rural residences and 2/3 urban residences.

Urban Residential

This class comprises lands served with community sewer and, usually, water utilities and suitable for intensive residential use. The amount of land proposed for urban residential use is ample for the population projected through 1995. Beyond that time, if this acreage becomes fully developed and more urban residential land is needed, then part of the lands reserved for rural residential use can be reclassified for urban residential use.

The areas proposed for urban residential use are designated for development in two stages. Stage 1 includes parts of the Dillingham Townsite, the Windmill Hill/airport area, and the Snag Point subdivision vicinity, plus adjacent areas that are suitable for future residential expansion. These areas are already sesrviced by or planned for the community sewer system and most of them receive city water. Intensive residential development of these areas will enable the city to defer major additions to the utilities system until the growth potential of these neighborhoods is fulfilled by filling in vacant lots and more intensive reuse of underused lots. This will help save on capital improvements and will also help keep down the operating and maintenance cost of utilities.

Recent residential construction around the downtown core shows a trend toward duplexes and apartment buildings. This shift toward higher residential densities in the central area is a natural progression as Dillingham grows. The plan anticipates the continued upgrade of existing residential land in the periphery of downtown to higher densities. City planning policy should promote the spread of intensive residential uses such as apartments and other multi-family dwellings around the town center.

In some areas classified for urban residential use (e.g. the Snag Point Subdivision), existing sewer service mains whose original design capacity did not allow for future growth may have to be upgraded.

As the supply of Stage 1 urban residential land becomes exhausted, the Stage 2 tracts can be improved for higher density residential use. The Stage 2 tracts include the developable lands near the junctions of Aleknagik and Squaw Creek

Roads, and the tract across Wood River Road that would become more accessible and appealing for higher density use if the proposed connecting road from the Townsite to Wood River Road by way of the Snag Point subdivision were built. Unfavorable topographic and soils conditions between these tracts and the existing water/sewer system mean that the extension of the water and sewer mains to Stage 2 neighborhoods will be costly. While community water and sewer facilities may not be installed in these areas for many years, the proposed plats for new subdivisions should be reviewed to assure that the lot and street design, utilities easements, etc., are consistent with eventual installation of community utilities.

Implementation of the urban residential classification will use one or more of a combination of tools. The most important tools will be subdivision review to ensure that plans of subdivision for urban residential tracts observe appropriate development standards and adoption of a municipal capital improvements program to coordinate installation of the basic infrastructure (roads, water and sewer, power and telephone, drainage improvements, etc.) that support development at higher residential densities.

Rural Residential

This class includes all sizable tracts that satisfy the criteria of good soils and drainage, freedom from natural hazards, suitability for onsite water and sewer, and accessibility, and which are not designated for another specific use. The areas proposed for rural residential classification are on or near the existing road system.

More specifically, rural residential areas include tracts rated by the Soil

Conservation Service as having soils and slopes that can be built on with a minimum of foundation and drainage problems. Also, these sites tend to be satisfactory for onsite water supply and wastewater disposal systems. Finally, as these sites tend to have better tree cover, with higher elevation and scenic views, they generally provide a more attractive setting for homesites.

Beyond compliance with existing subdivision, flood plain and other city ordinances, no special planning controls are recommended for the rural residential areas.

Commercial

It is a good planning principle to cluster similar commercial uses rather than disperse them far and wide. Clustering related commercial uses, especially uses that generate a lot of traffic, is more convenient for customers. It also allows shops to share customers as well as common facilities such as parking areas.

The demand for commercial land uses at Dillingham is expected to grow in step with population and economic growth. The commercial land use plan provides for three main sorts of future commercial development.

First, the plan proposes expansion of the traditional and established central business district in downtown Dillingham. In recent years, commercial development in the downtown area has intensified with the addition of new businesses and office buildings and expansion of many existing commercial facilities. About three-quarters of all commercial uses are now located in the downtown district.

This trend toward consolidation of trade and commercial services will most likely continue and commercial uses, including offices, will steadily increase their prominence in the downtown area. This trend implies that some of the underused parcels and older residential buildings will be replaced or converted to commercial uses.

The major obstacle to successful expansion of the dowtown commercial district is the cramped street patterns and lack of adequate parking. The Dillingham road Inventory, part of the City of Dillingham Comprehensive Plan: Phase II, identified numerous problems of encroachments, inadequate rights-of-ways, unofficial streets and other problems that have arisen over time to create congestion and traffic safety and parking problems in the downtown area. Unless remedial steps are taken, these traffic circulation and parking problems will steadily worsen and will choke off downtown growth.

The supply of sites for new businesses and expansion of existing businesses is also a serious constraint on downtown commercial development. It is noteworthy that a number of the major new commercial buildings (Bristol Inn, National Bank of Alaska, Choggiung's Kanquiqutaq office building) in recent years have been built on underused or improved sites outside the old core area. There still are scattered underused parcels and sites with poor soils and drainage scattered throughout downtown that could be redeveloped or reclaimed for commercial uses. The city should support this trend which upgrades the use of scarse downtown sites and which, with proper traffic planning and parking arrangements, could relieve some of the congestion downtown.

Second, the plan provides for appropriate commercial development in association with the Dillingham boat harbor and related industrial activities. This facility is a natural and commercially attractive location for marine-related commercial activities.

Third, the plan provides for secondary commercial development at sites convenient to the more populous residential satellites outside the Dillingham Townsite. The commercial subcenter in the Windmill Hill/Airport vicinity typifies this type of neighborhood commercial development. Provision is made for emergence of additional neighborhood commercial areas in the future near the intersection of Aleknagik/Kanakanak/Squaw Creek roads.

Industrial

The recommendations for future industrial land use are a logical extension and expansion of the development pattern that has evolved to date. Significant existing industrial uses include the fish processing plants and related facilities, the dock facilities and related petroleum storage and warehousing and open storage, and public utility plants such as the power plant and wastewater treatment facilities.

Some of the existing industrial uses have outgrown their existing sites or are no longer well situated in relation to other land uses. Alternative industrial sites should be made available for these uses, especially for future expansion or modernization of existing fish processing plant facilities. A shift to new modes of fish processing may also change the site orientation for some types of processing operations away from water access and toward accessibility for

airborne receipt and shipment of product. Finally, industrial sites should be reserved for new marine industries and other industrial enterprises that may arise in the future.

Although the vacant acreage classified for industry is substantial, engineering conditions will permit only a fraction of these tracts to be developed. The bulk of these tracts is located within identified flood hazard areas or wetlands and the coastal zone. This is largely unavoidable because most of Dillingham's industrial activity is marine-oriented, and the most feasible sites are naturally on lowlying coastal lands in the periphery of the boat harbor. Thus, there are no ideal choices. It is necessary to find a planning balance that fits both the community's primary economic functions and the shortcomings of these sites.

The proposed approach classifies these sites for marine-related industrial use on the condition that appropriate development standards will be met on a case-by-case, site-by-site basis. There are building practices, such as drainage improvements, landfill, piles, and special foundation designs, that can make industrial development in these districts acceptable. In some cases, development may need to be limited to selected industrial uses that are not flood-damage prone, e.g., open storage areas and seasonal uses. In recognition of the importance of these vacant lands for expansion of the fisheries and marine-related industries, and the overlapping problems of flood plain, wetlands and coastal management they raise, it is proposed that a special management district be defined within which a coordinated process for review and approval of development proposals can be instituted.

The prime area classified for industrial development includes the existing industrial complex comprised of the city dock, cold storage plant and marshalling yards, the P.O.L. dock and storage facilities, the cannery facilities, plus the industrial and vacant coastal lands in the vicinity of the boat harbor and beyond.

The cargo storage yard for the city dock is tightly hemmed in by other uses and has limited expansion potential. Also, truck access is poor. Marine shipments to and through Dillingham's port facilities have been rapidly increasing in volume. Additional dock and cargo storage facilities may become necessary in the future.

Like the general cargo dock operations, the bulk fuels terminal and tank yard have run out of expansion room at their existing site. For the long run, an alternative site for a P.O.L. terminal and storage facility will need to be developed to replace or supplement the existing facility. Possible sites include the now undeveloped Snag Point port site noted above or a site at Wood River.

At Wood River there is a fish processing plant with a newly improved dock. Other private marine industrial facilities nearby are under consideration. This site has serious limitations for all-tide regional port use due to restrictive channel depths and width and the combination of ice and tide conditions. However, the upland offer about forty areas of staging area and so may be suitable for certain industrial functions. Therefore, it is proposed for industrial classification.

The lower part of Squaw Creek has become established as an industrial area serving the commercial fisheries and is classified for industrial uses.

Public Facilities

This class includes many sites already used for existing public facilities and which should remain dedicated to those uses for the indefinite future. It also includes proposed sites for future public improvements.

Examples of existing sites include the school, airport, hospital, city hall, senior center, public safety buildings, boat harbor, numerous public office buildings, maintenance buildings and yards, cementeries, and miscellaneous other public uses. The plan provides for retention of these sites in public use, making provision for expansion where it appears that expansion will be warranted.

Secondly, the plan identifies sites that may be needed for new public facilities to serve new residential areas and to improve the standard of public services for a growing community.

Because of the process the city went through to identify future city land requirements, many of the site needs for future community facilities have been identified and will be provided for by lands proposed for reconveyance.

Transportation/Utility Corridors

This subsection addresses the need for major new highway and utility corridors that should be reserved for future use.

With rerouting of the state highway link between Wood River Road and Kanakanak Spur to bypass the airport along its southern boundary, Dillingham has a lengthy road network that provides access to most developable land and to the major destinations. The basic form of the road system is H-shaped. The four legs of the "H" are Alegnagik Road, Kanakanak Spur, Wood River Road and the main road to the Townsite. The legs are joined by the rerouted connection between the Wood River Road intersection and the Kanakanak Spur/Aleknagik Road junction.

The primary transportation recommendation is for development of D Street as an alternative arterial route through the central business district to relieve congestion along Main Street. This alternate will enlarge traffic flow capacity through downtown and will help sort out through traffic from traffic whose destination is in the central commercial area. This improvement will reduce congestion and parking problems. Previous city efforts to rectify right-of-way problems to permit widening of Main Street have been stalled by costly and unpopular right-of-way acquisition problems. Upgrading and connecting D Street would unable a substantial share of local traffic to bypass Main Street on its way to an from residential areas, employment centers and some commercial businesses.

The second planning recommendation is to reserve a transportation/utility corridor connecting the Townsite via the Snag Point Subdivision to Wood River Road and beyond. The object is to improve access to the better quality soils in the vicinity of the proposed junction at Wood River Road and in the northwest corner of the city. Eventual development of this transportation/utility corridor would offer access to the greatest volume of

developable land closest to existing utility systems and so with lowest site improvement costs. It would also improve access to the businesses and commercial services, offices and employment centers, and public facilities now concentrated in the downtown area.

Also, by shortening the route between Wood River Road and the port, warehousing and industrial facilities crowded into the Townsite, this proposed road would enhance the utility of waterfront lands at the end of Wood River as an alternative to relieve the increasing congestion that will affect the Townsite industrial lands.

This corridor is not proposed for development in the near future, but is reserved for a future time when the need for access to community expansion lands makes it economically feasible.

Public Open Space/Community Reserve

This class mainly includes existing or proposed public lands whose best use is open space and low-density recreational use, plus some municipal lands for which there is no specific and immediate proposed use. Nealy all of the municipal property in this class is part of the reconveyance of ANCSA Section 14(c)(3) lands to city ownership by Choggiung.

Much of the land in this class is wetlands, floodplains or hazardous for development and is poorly suited for intensive development. However, it does have positive value for such functions as natural habitat, as open space and buffer zones, and to protect steam drainage corridors. Public ownership helps conserve these values.

The Section 14(c)(3) reconveyance plan identifies a number of overland trails for transfer to the city. At present, these trails are most useful for winter travel and recreation, but some routes could be improved for year-round use in the future.

Unclassified

Unclassified lands comprise the residue of private lands in areas with poor building conditions. They also include some small tracts and isolated sites that are buildable but were not identified in the screening process as suitable for extensive development. Thus, unclassified lands may in some instances be suited for rural residential development or other uses to be considered on a case-by-case basis.

CHAPTER EIGHT

EXECUTIVE SUMMARY

A comprehensive plan is a guidebook for the general public and government officials to utilize in achieving orderly and coordinated development of the entire community.

At the heart of a comprehensive plan are the goals and objectives which provide the framework for making decisions regarding physical, social, and economic development--both public and private.

The City of Dillingham's Comprehensive Plan is comprised of a visual component, a poster sheet (which incorporates a land use map), and this supplementary guide. The goals and objectives in the plan are derived from numerous community meetings. To transform this vision of Dillingham into reality, Dillingham's residents and city officials must turn the plan into action.

The first step in implementing the plan is adoption of the comprehensive plan by the planning commission and city council. Again, the approval of the plan by both of these bodies does not insure that its features will be carried out. The goals and objectives of the Comprehensive Plan must be adopted by ordinance.

Dynamics of Dillingham

The City of Dillingham is a regional center in Southwestern Alaska. Since 1960, it has had more growth in permanent resident population than any other

community within the Bristol Bay region. The growth of Dillingham's population largely has been due to the billion dollar salmon fishing industry. Another major factor in Dillingham's growth is the expanded presence and activities of federal, state and local government agencies. The government sector activities make Dillingham a regional service center and provide it with a diversified economic structure. This economic diversification contributes to the stabilization of the highly seasonal nature of the fishing industry. The vitality of Dillingham will depend on the retention and expansion of year-round sources of employment. These expansion activities should not adversely impact either the health and safety of its residents or the environmental conditions which are the very basis of the economy.

As the State approaches the 1990's, it will be important for Dillingham to become more self-sufficient and establish its own revenue base. State oil revenues will be on the decline in the next decade. Another phenomenon in the 1990's that will affect community development in Dillingham involves the transformation of the Native Corporations. The Native Corporations, presently large landholders in Dillingham, will go public as the Alaska Native Claims Settlement Act is now written. However, there presently are efforts to amend ANCSA. Some of the proposed amendments would focus on the native corporations maintaining land ownership. As a result, land ownership status and land use patterns in Dillingham could change dramatically.

Finally, the decennial census in 1990 may result in the reapportionment of the legislative districts. The possibility of diminished representation for rural areas in the State Legislature could result in fewer state funds for local capital projects. To prepare for these changes, it will be important for Dillingham to have a strong local government in place with the planning tools to insure revenue flow for needed municipal projects.

Recommendations

The goals and objectives found in Chapter Six focus on a comprehensive set of community issues in Dillingham. They are presented in no particular order of priority. It is the City of Dillingham residents, through its Planning Commission, City Council, and city administrators, who must decide priorities. The priorities will be decided in community workshops to develop a six-year capital improvements program. Ultimately, the capital improvements program will fully implement the comprehensive plan.

Although it is not within the scope of a plan to direct a community in its decisions on community development, some guidance as to what are prime issues can be provided. The broad range of goals and objectives is meant to be comprehensive and certainly exceeds the labor and funds available to implement them. Choices must be made.

Public Services:

The overriding concern in a comprehensive planning effort is to protect the health, safety, and social welfare of a community. To this end, there are some basic services needed in Dillingham. The City is in the design-phase of an installation of a sewerage treatment facility; the construction of this facility should be a top priority in the next year. Extension of the sewerage collection system is secondary to this. In addition, the City should work closely with DEC to monitor the approval and performance of on site septic systems. In land use decisions that come before the Planning Commission and City Council, these bodies should consider: 1) the extent of the water and sewerage systems, 2) costs of

extension to densely populated residential areas, and 3) the ability of the soils to accommodate proposed developments.

Community Facilities:

In order to enhance Dillingham as a livable community for its present residents and to those who may locate locate there in the future, it is important the City have adequate, affordable, and accessible community facilities. Community facilities include schools, the University of Alaska, trails and pedestrian facilities, parks, recreational facilities, and social service facilities. Residents have already identified the immediate need for identifying sites for school facilities expansion. We recommend that residents and the City work together in a structured meeting to locate several specific sites for future schools. Suggested criteria for school sites include:

a) density of population,
b) availability of public water and sewer; cost of extending public services,
c) funding,
d) cost of transporting students, and
e) availability of land; land assembly or land acquisition costs.

The school site selection task force may come up with additional criteria. The members of the task force would include the city manager, planning director, superintendent of schools, members of the school board, members of the planning commission, city council, and other people from the Dillingham School District and the community-at-large.

The school site alternatives should be included on the land use map to be part of this update of the comprehensive plan. The land use map will appear on the poster sheet.

Pedestrian Facilities:

Other community amenities that are needed to improve the livability of Dillingham are pedestrian facilities. Facilities such as sidewalks, pathways, or trails not only provide for pedestrian safety but also recreation. Any road improvement plan should include pedestrian facilities. Residents specifically identified the need for pedestrian facilities in Windmill Hill and HUD Housing. As the City and residents formulate their capital improvements program, these concerns should be considered.

In community discussions, residents also identified the need for a park on the old air strip that includes outdoor recreational areas. In the CIP workshops, the funding required to implement the park plan should be assessed.

Land Use:

Much of the livability of a community depends on the compatibility of its land uses. We recommend the Planning Commission and City Council utilize the land use goal and objectives and the land use map on the poster sheet as guidance in land use decisions. The land use plan should be adopted by ordinance.

Economic Development

For Dillingham to have a diverse economy with local year around employment, public and private cooperation are needed. Mainstays of the economy are the fisheries and the government sector. Many of the recommendations already mentioned will provide the amenities needed to retain and attract government offices.

In order for Dillingham to experience additional economic benefit from the salmon fisheries, we recommend the City utilize the recommendations in the Dillingham Port/Harbor Development Study. The recommendations in the development study call upon both the public and private sectors.

These recommendations include:

1) berthing plan for existing harbor,

2) private development of satellite harbor sites with assistance of city in land assembly, tax abatement, technical assistance in areas of financing, and

3) development of seafood industrial park with limited government involvement.

Local business owners, landowners, public agency representatives should be invited to a local enterprise development roundtable in conjunction with the capital improvements program work sessions.

In addition, the City might consider sponsoring an economic development roundtable in conjunction with the capital improvements program work sessions. This would provide local business owners, landowners, public agency representatives and the City to discuss development issues and priorities.

APPENDIX

APPENDIX A

SUPPLEMENTARY REFERENCES

TO

COMPREHENSIVE PLAN

SUMMARY DESCRIPTIONS

- City of Dillingham Comprehensive Plan (1971)
- City of Dillingham Comprehensive Plan Update, Phase 1
- City of Dillingham Comprehensive Plan, Phase 2
- Dillingham Airport Master Plan (Draft, 1985)
- Dillingham Alaska Small Boat Harbor Improvements: Final Detailed Project Report and Environmental Impact Statement
- Bristol Bay Coastal Management Program, Volume 2 - Management Plan (Conceptually Approved Draft, 1984)
- Bristol Bay Development Study, Volumes 1 and 2 (1984)
- Bristol Bay Underdeveloped Commercial Fisheries Potential (1954)

TITLE: City of Dillingham Comprehensive Plan

PREPARED BY: Alaska State Housing Authority, Planning & Technical Department
Office of the Governor, Division of Planning & Research

DATE: June 1971

SUMMARY:

The plan comprehensively investigated Dillingham by analyzing the geographic setting, background and history, physical conditions, regional transportation, population, economu, employment and income, housing, future land use and community facility needs.

An area continuously occupied for thousands of years, Dillingham is located in southwestern Alaska within the Bristol Bay region at the confluence of the Wood and Nushagak Rivers. Dillingham experiences aspects of both coastal and interior climates. However, soil characteristics, particularly drainage capabilities, affect development in the area more than climate. Topography, slope and beach erosion are also significant factors. Flat areas of wet land and muskeg between these uplands are the only general areas with significant flood potential. The waterfront and along Squaw Creek, the only significant stream within the city limits, are also subject to flooding.

Transportation needs are met by means of sea and air. Economics of future highway consstruction depends on development in the region. Existing roads within the region are few; two highway connections to Dillingham from Alaska's connected road system have been proposed. Sea transportation is possible only during the four or five months of the year when Bristol Bay and the Nushagak River are free of winter ice. However, much of the freight shipping corresponds with seasonal enterprise such as commercial fishing, canning and construction. Deep draft shipping is further limited by bay conditions. The Dillingham Municipal Airport is comparable to the joint military and civilian airport at King Salmon, however, planned improvements should greatly increase the facility.

Population was analyzed and projected through 1980, based on past growth and economic forecasts. Fluctuations occur due to the seasonal aspect of the fishing industry. The plan described in history of the commercial salmon fishery from 1924 and urged continued comprehensive biological studies for Bristol Bay Red Salmon. Other economic development potential was investigated including oil and gas, coal, minerals, hydroelectric, tourism, timber and agriculture. Potential conflicts with oil and gas development and the fishing industry were of concern; other development potential were not yet significant.

Employment, income and housing were addressed in detail. According to a survey, one-third of Dillingham's residents are employed through the fishing industry, income therefore fluctuates. Housing conditions were deemed "a handicap to the welfare of the community". Another survey showed that 70% of the housing units reported were classified as unsound. The need for water and sanitary utilities was also identified. Availability of land, construction and maintenance costs, sources of financial credit, lack of public services and lack of public resources were identified as factors affecting housing.

Land use patterns were described emphasizing continued consolidation of commercial and industrial development and minimum lot size regulations for residential areas to prevent well contamination and other health hazards. A Community Reserve area was identified to accomodate community expansion. Needs for community facilities for education, recreation, community center and public safety were identified as well as maintenance of the small boat harbor, and improvement of water and sewer treatment and utilities.

ECONOMIC DEVELOPMENT:

Issues:
1. The average salmon catch per fishermen has been decreasing, despite the fact that the average catch in Bristol Bay is increasing.
2. Pubilc and private cost of building on unsuitable soil types or other areas will most likely be high.

Goals:
1. Stress new economic growth and emphasize economic security.
2. Support a development schedule of the area's extractable natural resources for the greatest long term benefit of the city.
3. Pursue policies to reduce seasonal fluctuations in employment opportunities.

Recommendations:
1. Encourage the maximum potential use of the fishery resources through policy, planning, management and assistance to projects which seek to develop the resource.
2. Encourage the establishment of new economic growth which benefits the area residents and expands the economic base.

LAND USE:

Issue: Soil characteristics, topography, slope and beach erosion affect development capabilities and patterns.

Goals:
1. Enhance the industrial potential of the planning are through the careful selection of zoned industrial sites coordinated with the provision of highways and utilities.

Recommendations:
1. Encourage improvement and future concentration in the existing business district.
2. Encourage concentrated residential development in the townsite to take advantage of the existing services which can be feasibly provided in this area.
3. Allow for planned rural residential development in the outlying area which is consistent with orderly development, health and safety. This development should occur on buildable land, where access exists and with minimum lot sizes.
4. Establish and hold a long range community reserve where planned and staged development can be controlled and released in accordance with the future needs for community expansion.

GOVERNMENT:

Issue: Unresolved decisions related to land use and ownership affect population growth.

Goal: Encourage the establishment of functional and efficient shopping areas in central business areas, neighborhood shopping areas in regional areas.

Recommendations:
1. Establish the functions of community planning within the city, based on the continued development of the comprehensive plan.
2. Establish implementation measures and ordinances such as subdivision regulations, zoning, budgeting and building codes to effect the objectives of the comprehensive plan.
3. Review assessment and taxation policies and procedures to determine whether changes are required, and, if so, in what areas.
4. Consider taxation on a service area basis.
5. Seek forgiveness of water and sewer bonds.
6. Seek additional sources of revenue.
7. Begin work on a City Charter.
8. Study additional ways to improve the budget.
9. Develop an allotment process to permit better fiscal control.
10. Develop ordinance pertaining to operation and maintenance of City dock at boat harbor.

HOUSING:

Issue: Housing condition and availability.

Goal: Encourage concentrated residential settlement, where a wide range of community facilities would be feasible.

Recommendations:
1. Encourage the development of a three year housing program for production of housing in the townsite.
2. Obtain state and federal aid to provide additional housing.

TRANSPORTATION:

Issues:
1. Transportation costs are high.
2. Sea transportation is only possible for four or five ice-free months, furthermore, deep draft shipping is limited by bay conditions.
3. Highway connections to the Alaskan road system are not economically feasible.

Goal: Designate a good network of roads and encourage their optimum usefulness.

TRANSPORTATION (continued):

Recommendations:
1. Encourage the expansion and improvement of the existing state airport as the focal point of transportation to all parts of the community.
2. Encourage the safe use of the small airport to preserve its present benefit to the city but without substantial public expenditure to expand the facility.

PUBLIC WORKS/PUBLIC SAFETY:

Goals:
1. Influence the location of economic activities to provide an efficient system of public services.
2. Encourage social betterment through healthful living conditions.

Recommendations:
1. Enforce all City Ordinances and State Laws, particularly those pertaining to disposal of trash and animal control.
2. Perform training services for Fire Department.
3. Develop a Community Relations Public Safety program with primary emphasis in the schools.
4. Upgrade streets by adding gravel, crowning and ditching.
5. Improve, clean and upgrade City dump; find a new location; fill in and cover old borrow pit.
6. Initiate another clean-up campaign in the fall and spring.
7. Provide adequate supply of good quality water.
8. Make necessary modifications to water tower to assure trouble free operation in the winter.
9. Enforce mandatory sewer hook-up ordinance by extending service lines wherever feasible.
10. Extend water service lines in accordance with the comprehensive plan.
11. Determine the extent of the work required to place sewage treatment plant in operation and the cost to do so.
12. Purchase a new fire truck and equipment to permit expanded control ability.
13. Increase training activities for individual firemen.
14. Improve fire reporting to meet Pacific Fire Rating Bureau requirements.
15. Test all fire hydrants, including four new ones to be installed, to assure that they are functioning properly.
16. Increase public awareness of fire department services.
17. Meet Pacific Fire Rating Bureau requirements for reduction of fire insurance premiums.

COMMUNITY FACILITIES:

Goals:
1. Encourage the provision of a system of parks, playgrounds, open spaces, regional parks and conservation areas.
2. Pursue educational policies that will improve the employability of its students.
3. Encourage social betterment through education and public facilities.

Recommendations:
1. Provide television to community by acquiring and maintaining translator system from King Salmon.
2. Build new park in center of town.
3. Construct and distribute planter boxes throughout town.
4. Paint library building and do necessary landscaping.

TITLE: CITY OF DILLINGHAM COMPREHENSIVE PLAN UPDATE, PHASE 1

PREPARED BY: DOWL Engineers

DATE: November 1981

STUDY GOAL: To analyxe and update the 1971 Dillingham Comprehensive Plan, map pertinent baseline data and develop guidelines for Phase II of the update project.

SUMMARY:

Goals and objectives for the comprehensive plan update project were developed based on the results of a Community Attitudes Survey administered in the winter and spring of 1980-81 respectively. The primary goal was identified: "To create an atmosphere that will enhance the quality of life, rather than emphasize the quantity of growth". Simultaneously, updated information on land status, land use, utilities, soils, fish and wildlife habitats, hazard areas, significant view and archaeological sites were mapped for the entire City of Dillingham. Additional research was conducted for determining the trends and characteristics of population, housing and the economy of the region.

Population, housing and economic trends were found to be interrelated. Population fluctuates due to seasonal work inherent in the fishing industry, the mainstay of Dillingham's economy. The seasonal fluctuations promote an atmosphere of uncertainty which leads to the use of temporary housing structures for permanent housing and a reluctance on the part of individuals, developers and bankers to risk investments in quality housing.

The fluctuating economy has been offset to a certain extent by the role that Dillingham plays as a regional center for the Bristol Bay area. Government, city, state and federal, and expanding tourism and transportation industries provide employment. Three major employers were established following passage of the Alaska Native Claims Settlement Act of 1971, the Bristol Bay Area Hospital, the Bristol Bay Native Association and the Bristol Bay Area Health Corporation. All three contribute a stabilizing influence on the economy.

Land use patterns outlined ten years ago in the 1971 comprehensive plan have not varied. The established downtown area includes all of the industrial complexes, most of the commercial and public uses and higher density residential development. Windmill Hill and the airport area represented a secondary area with commercial, public and residential use. Remaining development was associated with the Public Health Service Hospital at Kanakanak and sparse distribution of single family residences along major roadways. New residential areas have been developed just west of the airport, along Aleknagik Road, northeast of Shannon Lake and through a HUD housing project north of downtown. Future land use is expected to follow the existing trend with variations stemming from availability of developable land and road development.

Natural hazards, such as flooding and beach erosion, and soil suitability affect development. A soils matrix was developed for the area comparing soil types with suitability limitations such as slope, flood potential, drainage, water table and permafrost. Seasonal variations on several soils were noted as well. Fish and wildlife habitat and distribution was briefly described and mapped.

Historical and archaeological sites were only generally referenced in accordance with the Historic and Archaeological Preservation Act.

POPULATION:

Issue: Community growth (maintain at present rate or decrease, small size considered an attribute);

ECONOMIC DEVELOPMENT:

Issues:
1. Shortage of commercial services such as shops and stores, especially clothing, grocery, automotive, shoe and hardware stores.
2. Additional development desired in fishing related, industrial development and other marine oriented activities such as boat repair.
3. Mixed reaction concerning desirability of tourism, though identified as compatible with fishing industry.

Goal: Develop a broad based economu through encouraging growth in the marine and fishing industries, emphasizing Dillingham's role as a regional service and commercial center, eliminating adverse impacts of natural resource development on community, providing for economic generators and permitting limited tourism.

LAND USE:

Issue: Land use should be regulated: concentrate industrial and commercial use in onr or more specific areas, and reserve waterfront for water-dependent industries and businesses.

Goals: Develop a realistic and responsive land use plan that addresses commercial, residential and industrial land use.
1. Commercial: Identify areas for convenience businesses and business services, investigate suitability of land use regulations and effectively locate commercial development.
2. Residential: Concentrate in existing and new areas set aside for residential development, control density to meet minimum utility standards, improve public services and discourage intrusions in commercial/industrial areas.
3. Industrial: Minimize conflict with residential uses, develop transportation routes to avoid use of minor residential roads and support business services which complement industrial uses.

Recommendations:
1. Prepare future land use recommendations based on the above.
2. Integrate transportation planning with land use decisions, implementation measures and public facility development.

GOVERNMENTAL:

Goal: Provide for direct citizen participation in the planning process through citizen advisory boards, special workshops, neighborhood based planning groups and regular solicitation of public input.

Recommendations:
1. Review on-going studies along with this document and the 1971 plan.
2. Coordinate with agencies and organizations providing or planning to provide above facilities or services.
3. Recommend implementation measures such as subdivision regulations, building codes, land use and development regulations (zoning), tax incentives, floodplain regulations, capital improvement programming, public facility phasing and other municipal land management techniques.

HOUSING:

Issue: Regulate housing density.

Recommendation: Develop a housing strategy to improve existing housing conditions and to meet future demand.

ENVIRONMENTAL:

Issues:
1. Qualities of the community that drew people to Dillingham such as size and the surrounding environment, should be preserved.
2. Regulate construction standards in hazardous areas such as erosion-prone river banks or in flood areas.
3. There was little support for oil and gas development in or near Dillingham as it was felt incompatible with the community.
4. Dust and mud.

Goal: Maintain and enhance the unique characteristics of Dillingham by encouraging an understanding of the relationship between human well-being and environmental quality, promoting establishment of state and federal policies designed to protect surrounding area, promote retention and reestablishment of vegetation within the community and the establishment of a dust control program.

TRANSPORTATION:

Issue: Poor roads.

Goals:
1. Maintain, upgrade and enhance transportation facilities through annual review, planning, maximizing community input in planning process and improving and expanding the small boat harbor and the airport.
2. Upgrade roads and alleviate parking problems in heavily developed areas.

TRANSPORTATION (continued):

Recommendation: Inventory and address roads, streets, trails, docks, harbors and airports as elements of transportation planning for the area.

PUBLIC WORKS/PUBLIC SAFETY:

Goal: Provide a variety of quality services to improve and enhance the living environment through improving sewer and water systems, developing a storm water drainage system, upgrading and enhancing the law enforcement and fire protection facilities and controlling dogs within the city.

Recommendation: Address demand for utility and energy sources and public safety, including fire and police services.

COMMUNITY FACILITIES:

Issue: Shortage of parks and recreation and cultural facilities;

Goals:
1. Provide a broad choice of recreational opportunities oriented towards neighborhood facilities and programs through planning, utilization of hazard areas and marginal lands for recreation and open space, development of museums, theaters and auditoriums, youth facilities and appointment of a citizen advisory park board.
2. Develop job training courses.

Recommendation: Address demand for educational, recreational and cultural facilities and social programs.

TITLE: City of Dillingham Comprehensive Plan Update, Phase 2

PREPARED BY: Kevin Waring Associates

DATE: November 1982

STUDY GOAL: To update the land use planning element of the 1971 Dillingham Comprehensive Plan. The report complements the Phase 1 Update completed by DOWL Engineers, the 1971 plan and other planning studies and mapwork, existing planning ordinances and the capital improvements program proposed as part of plan implementation to serve as a comprehensive development plan for Dillingham.

SUMMARY:

Dillingham's natural setting, economu, population and existing land status and land use were assessed. Three features of the physical landscape shaped settlemtn patterns: surficial geology and soils conditions; water supply and natural hazards. Only about one-third of the total land are within the City's boundaries was classified as suitable for development in terms of soil, drainage and slope conditions. Another one-eighth of the land area was evaluated as just marginally buildable. The remainder (more than one-half of Dillingham's land base) was judged very unsuitable for development, most often because of wet, deep, peaty soils or poorly drained fine silty soils.

Dillingham relies on groundwater resources both for its community water utility and for individual water supplies. Flooding and erosion are considered the two chief natural hazards of the area. The exposure to flood hazard is an important constraint on town development since it limits the available options for water-related development in a settlement whose economy is heavily dependent on efficient marine transportation and commercial fishing facilities. This problem is compounded by the fact that the elevated bluffs which are above flood level afford poor access to dock facilities for transfer or marine shipments.

Employment was concentrated in the sectors of government (21.7%) manufacturing, i.e., fish processing (18.7%), service industries (17.4%) and fishing (12.1%). Further analysis revealed that fisheries, plus the public services and commercial and transportation services Dillingham provides to the region account for most of the basic economy. For the future, the prospects of these basic industries, plus any major new economic enterprises that enter the area, will largely detemine the amount of land that will be needed for industrial and commercial uses, for public infrastructure and for residential development.

Based on the Phase 1 economic analysis, modest, steady economic and population growth is projected for Dillingham. This projection assumes modest growth in the fishing industry, including some diversification into other species and perhaps some modification of processing methods. No assumptions were made about the more speculative oil and gas industries and development of the region's mineral resources. Governmental employment was expected to level off with the possible exception of employment in federal and state resource management agencies. New business enterprises generated by the capital and resource lands acquired by Choggiung, Ltd. and other entrepreneurs and business partners are

promising. Moderate population forecasts predict that the 1980 population (1,563) will double by 1995.

Present land use patterns are unusual for a rural Alaska settlement. Instead of the typical compact rural residential Alaskan settlement tightly hemming a riverbank or shoreline, Dillingham is clumped in nodes at the original Townsite, Windmill Hill, the hospital, Wood River or dispersed along the road corridors. A broader set of living choices are available, however. Development of public services becomes more difficult and costly. Commercial development is concentrated in the downtown and airport areas.

Land transfers mandated by the Alaska Native Claims Settlement Act (ANCSA) are redically revising the pattern of private and public ownership of local lands. Approximately all of the original Dillingham Townsite of 111.5 acres, plus homesteads and other tracts are patented in private ownership. Choggiung, Ltd. will be a major private landholder, as will the City. Native Allotments comprise approximately one-third of all lands within the City and may not be subject to municipal planning jurisdiction or real property taxation. Federal and state land holdings will be limited.

Future land use was not always determined by current land ownership. Seven land classifications were developed: residential, urban and rural; commercial; industrial; public facilities; public open space/reserve and unclassified. Recommendations were made for each category and ten measures were proposed for plan implementation. Detailed descriptions of the planning process and Native allotments were included as appendices.

Ten methods were identified for plan implementation:

1. Plan adoption
2. Subdivision review
3. Capital improvements program
4. Local roads, circulation and parking
5. Municipal land acquisition, management and disposal
6. Floodplan management
7. Phased development of residential neighborhoods
8. State/federal regulatory agency coordination
9. Cooperative planning/intergovernmental coordination
10. Special use ordinance

LAND USE:

Issue: To promote efficient and attractive patterns of community growth.

Goal: Reserve sites for future public improvements, including transportation and utility corridors.

Recommendations:

1. Develop urban residential areas in two stages. First concentrate on the townsite, Windmill Hill/airport area and the Snag Point subdivision vicinity which are already serviced by utilities. (Existing sewer mains may have to be upgraded.)

LAND USE (continued):

2. Develop lands near the junctions of Aleknagik and Squaw Creek Roads and the tract across Wood River Road if the proposed connecting road were built. (Extension of the water/sewer system will be costly.)
3. Develop rural residential use on or near the existing road system on all sizable tracts with good soils and drainage, freedom from natural hazards, suitability for onsite water and sewer, accessibility and not designated for another specific use.
4. Expand the central business district, particularly in association with small boat harbor and improve traffic circulation and parking problems. Secondary expansion should occur at sites convenient to the more populous residential satellites outside the townsite.
5. Maintain existing cemetery sites and use site identified for future use.
6. Consider use of unclassified lands on a case by case basis.

GOVERNMENT:

Goals:
1. Establish a sound planning framework for private land use and investment decisions for housing, commercial and industrial development.
2. Prepare for municipal management of public lands to be conveyed to the City by Choggiung pursuant to Section 14(c)(3) of ANCSA.
3. Establish a framework for cooperative planning with other major local landowners, including Choggiung and Native allotment owners.
4. Establish municipal planning policies to guide federal and state decisions about public facilities, land use and resource management affecting Dillingham.

Recommendation:
1. Allow for futre expansion of industrial development. Since much of the area involves floodplain, wetlands and coastal management areas, a special management district should be defined within which a coordinated process for review and approval of development proposals can be instituted.

ENVIRONMENTAL:

Goals:
1. Protect quality of water supply and environmental health.
2. Prevent loss of life and property from natural hazards.
3. Protect natural habitats and wetlands.

Recommendations:
1. Direct future development to those areas rated most suitable for construction or to sites with marginal soils that can be made suitable by drainage, fill or other engineering improvements.
2. Classify areas of very poor soils conditions for open space and other low-intensity uses or leave unclassified.
3. Identify and classify a limited number of well situated, sources of gravel and fill for use. Selection should be governed by accessibility, freedom from potential environmental and safety problems, volume of removable resources, presence of vegetative cover or terrain to screen operations, and potential for rehabilitation and reuses. Lacking zoning, performance standards are the more effective means for regulating gravel pit operations.
4. Development should be directed to the upland moraines with superior soil conditions. Development is not advisable for poorly drained lowlands or flood hazard areas and it is recommended that, depending on ownership status, such areas be classified as rural residential or open space. Any development in floodplains should comply with the standards of the City's floodplain ordinance.
5. The Alaska Department of Fish & Game identified three particular areas worth special land planning attention: stream corridors and other brushy lowlands as moose habitat; the intertidal zone as habitat for waterfowl and shorebirds; and Squaw Creek, cataloged as an anadromous fish stream for its modest coho salmon population.

TRANSPORTATION:

Recommendations:
1. Await results of airport study to be conducted in 1983 to determine airport land use needs.
2. Develop D Street as an alternative arterial route through the central business district to relieve congestion along Main Street.
3. Reserve a transportation/utility corridor connecting the townsite via the Snag Point subdivision to Wood River Road and beyond to improve access to the better quality soils in the vicinity of the proposed junction at Wood River Road and in the northwest corner of the City.

TRANSPORTATION (continued):

4. Develop a comprehensive road improvement program, and conduct traffic circulation and parking studies.
5. Improve overland trails for year-round use.

PUBLIC WORKS/PUBLIC SAFETY:

Issue: To protect the general well-being and safety of the community.
Goal: Provide economical and efficient provision of public facilities and services.
Recommendations:

1. Areas now served by the community water system or designated for community utility service in the future should be classified, subdivided and developed to standards that favor higher densities. Also, community sewer systems should be installed where warranted ;by high densities or soils conditions. Conversely, in rural areas not planned for community water or sewer services, development densities should be kept below the threshold at which they threaten to deplete or contaiminate groundwater supplies.
2. Two sites were identified for future firehalls to serve the developing residential subdivisions along Aleknagik Road and to residences near Kanakanak.
3. Use undeveloped acreage on State Hill for central public offices and facilities. Hold in reserve a parcel north of the small boat harbor for a new public safety building, maintenance building or similar use.

COMMUNITY FACILITIES:

Recommendations:

1. The city and school district should coordinate future school site selections.
2. Acquire a number of specified sites for development as neighborhood parks.
3. Designate identified areas as public open space/community reserve.

TITLE: Dillingham Airport Master Plan (Draft Technical Memorandums 1-4: Background Information Research and Inventory, Forecasts of Aviation Demand, Demand/Capacity and Facility Requirements and Technical and Alternatives Evaluation)

PREPARED BY: TRA/Farr for the Alaska Department of Transportation and Public Facilities

DATE: September 1983, November 1983, May 1984 and February 1985

SUMMARY:

The first step was to inventory airport facilities, assess aviation activity and evaluate airport financial information. Existing socioeconomic, land use and environmental conditions were also evaluated. Forecasts for aviation demand were formulated based on the assumption that basic economic and demographic trends in Dillingham will continue. Other regional issues were also considered.

The following components of the Dillingham airport were analyzed to determine the ability of the airport to handle forecast demand:

Runway system
Taxiway system
Aircraft parking aprons
Passenger terminal facilities
Auto parking and surface access
Utilities and support facilities
Local airspace

The analysis revealed several findings:

- The existing runway is physically capable of supporting the largest size aircraft reasonably expected to use the airport.
- Forecast demand for the airport will exceed the present runway's annual capacity soon after 1993.
- The existing single runway does not provide the total wind condition coverage required by the Federal Aviation Administration (FAA).
- Construction of a control tower and implementation of air traffic control services would increase the safety of operations at the airport and maximize the available capacity, however it is unlikely FAA would provide construction or staffing in the near future.
- Existing passenger terminal facilities will continue to become more congested as peak hour certificated passenger movements increase. Existing capacity will be exceeded by 1985.
- Lack of designated automobile parking in the terminal area will cause increased congestion during peak period.
- Traffic flow into and out of the terminal is affected by the requirement that all airport users and several local residents use the same road.

Alternatives were developed to meet projected facility requirements based on the medium level air traffic forecast for the target years. Airside facilities, terminal area layout, aircraft parking and service facilities, auto access and parking vary according to the alternative. Each alternative addressed site-specific considerations such as current lease commitments, proximity to adjacent community land uses and potential conflicts, ability to expand, circulation and traffic flow and other aviation activities.

Two implementation alternatives were developed and thoroughly evaluated. Both alternatives would accomodate future forecast demand. The most significant difference between the alternatives was location and alignment of the planned crosswind runway.

ECONOMIC DEVELOPMENT:

Issues:
1. Lease lot expansion.
2. Air cargo (fish haul) facilities.

LAND USE:

Issues:
1. Land requirements.
2. Aircraft control tower site reserve.
3. Aircraft noise exposure and land use compatibility adjacent to the airport.
4. Compatibility with land use planning goals as established in the Dillingham Comprehensive Plan.
5. Impact of airport growth on adjacent land uses.

TRANSPORTATION:

Goals:
1. To provide guidelines for future development that will meet the short, intermediate and long term aviation needs of the Dillingham area.
2. To forecast future aviation activity at Dillingham airport.
3. To determine the ability of various components at Dillingham Airport to handle forecast demand and to identify the ideal type and size of facility required to meet future demand.
4. To evaluate alternatives for airport expansion and improvement.

Issues:
1. Local airport ownership, operation and maintenance.
2. Airport road access.
3. Crosswind runway feasibility and alignment.
4. Parallel taxiway feasibility and layout.
5. Passenger terminal requirements.
6. General aviation transient and based aircraft parking requirements.
7. FAR Part 77 obstruction surface evaluation.
8. Role of Dillingham as a regional transportation center.
9. Need for and feasibility of lengthened primary runway.
10. Provision of expanded heavy aircraft apron to accomodate fish-hauling aircraft.
11. Increased FAA instrument approach capability through improvement of approach slope lighting and runway condition.

TRANSPORTATION (continued):

Recommendations:

1. Add a crosswind runway.
2. Construct additional terminal area, heavy aircraft apron and commercial lease lots.
   - The apron should allow increased parking for based operators on the existing apron, while providing required space for large transient transport aircraft.
   - The design should ensure separation of traffic types and should reduce vehicle traffic on aircraft movement areas.
3. Additional general aviation aircraft apron for based aircraft tie-down and separation of itinerant aircraft will be required after 1990.
4. Provide more public parking in the passenger terminal area.
5. Construct partial or full parallel taxiway to Runway 1-19.
6. Add an FAA operated Air Traffic Control Tower.
7. Expand passenger terminal facilities.
8. Improve road access and parking at the airport.

PUBLIC WORKS/PUBLIC SAFETY:

Issues:

1. Airport utilities.
2. Airport security fencing and control of airside access through tenant lease lots.
3. Effects of airport improvements on the need for additional utilities and public improvements.
4. Enhancement of operating safety through improved lighting, user separation and control of vehicles.

TITLE: Dillingham Alaska Small Boat Harbor Improvements, Final Detailed Project Report and Environmental Impact Statement

PREPARED BY: U.S. Army Corps of Engineers, Alaska District

DATE: May 1985

STUDY GOALS: 1. To identify a Federal interest in alleviating navigation related problems at Dillingham, Alaska.
2. To analyze three alternatives to alleviate the overcrowding at the Dillingham small boat harbor and recommend a solution:
   a. Expand the present harbor;
   b. Construct a new harbor at Squaw Creek; or
   c. Construct a floating breakwater offshore in Nushagak Bay.

SUMMARY:

The Corps of Engineers began the evaluation by reviewing previous applicable studies, coordinating efforts with other local, state and federal agencies and developing a problem identification process which evaluated existing and future conditions, local concerns, planning objectives and alternative proposals. A recommended plan was subsequently developed, outlining design considerations, environmental effects and economics. The optimum solution was identified and recommended.

First, existing conditions, such as physical features, climate, oceanography (tides, offshore currents, icing and suspended sediment concentrations) were investigated. The human history of the area, human resources, population trends and employment opportunities were also researched. The area's natural resources were identified from an economic potential standpoint. Fish and wildlife, commercial fisheries, tourism and recreation and others (timber, mining and agriculture) were evaluated. Commercial fisheries was determined as most significant with a potential for increased importance of recreation and tourism over the next 20 years.

The study of existing conditions also focused on the existing harbor project, its physical features, maintenance history and harbor usage. The dilapidation and reduced effectiveness of a rock sill constructed in the harbor entrance channel to reduce siltation was identified as a problem. Dredging needs and existing operations were evaluated in terms of cost, reliability, maintenance and problems associated with simultaneous usage by the commercial fishing fleet. It was mentioned that plans were underway to improve the dredging productivity in the coming years.

Future conditions such as moorage demand, commercial fleet needs and recreational fleet potential were evaluated. It was determined that harbor usage will probably remain at or below the 1981 level (maximum of 257 boats per day) unless significant improvements are made. An analysis of vessel registration records and daily boat counts indicated that the average quantitative demand for moorage space at Dillingham is for about 300 vessels. No charter boats operate out of Dillingham at this time. However, growth in the tourism sector may lead to future tour and sportfishing charter boats operating out of the harbor. Best estimates, however, indicate that this service would probably be provided by existing semi-converted commercial fishing boats during

closed periods or in the off-season. There is general agreement that the harbor's predominant use will continue to be support of the fishing industry.

Planning objectives and three expansion alternatives (listed above), were developed from the literature review, problem identification process and public testimony. The first alternative, expansion of the existing harbor, involved expanding the existing basin from its present five acre area to a larger area from 10 to 20 acres. It was also proposed that the entrance channel sill and basin be lowered form their present +7 and +2 feet MLLW elevations to provide increased access to the harbor from Nushagak Bay. The proposition of a structure in the entrance channel, which would allow winter closure of the basin to reduce sedimentation and subsequent maintenance dredging, was investigated. Realignment of the entrance channel was also investigated. Since any variation of the proposed expansion of the existing harbor would involve an annual maintenance dredging program, various schemes for accomplishing the dredging were analyzed for their economical and operational advantages. Various mooring systems and facilities for launching, removing and storing vessels were investigated in conjunction with the dredging analysis and the design of the basin geometry.

The second alternative, construction of a floating breakwater, produced sufficient disadvantages to eliminate the plan from detailed consideration. Disadvantages included lack of quarry material in the vicinity to construct a permanent rubblemound breakwater, necessitating the construction of a movable concrete floating breakwater. Such a breakwater would require annual placement and removal due to wave and ice conditions and would not provide adequate moorage in severe storm conditions.

The third alternative, construction of a new harbor near the mouth of Squaw Creek, was also eliminated as a viable alternative due to practical problems of designing and constructing a harbor at the site, a lack of local support and the potential adverse environmental impacts.

A recommended plan was developed based on design considerations, environmental effects and economics. Design considerations included physical, operational and economic constraints (sedimentation, access, maintenance needs, etc.); hydraulic and dredging analyses; winter closure possibilities; shore protection (erosion prevention); inner harbor and upland facility development needs; and construction (scheduling, methods and phasing).

Environmental effects were measured (and documented in an Environmental Impact Statement) in terms of benthos populations, fisheries, water quality, wetlands, wildlife and quarry site needs. The economic study outlined the economic considerations of the recommended plan and included an analysis of the annual benefits realized with improved harbor conditions and the annual costs. (Benefit categories analyzed were only those to which tangible monetary values could be assigned). The assumption was made that the major portion of the operation and maintenance costs of the project would be assumed by the Federal Government. Costs were determined as follows:

Total first cost for constructing the project would be $12,239,600, of which $1,528,000 is the federal cost and $10,711,600 is the local cost. Of the latter, $4,609,000 would be for major navigational features, $997,800 would be for local National Economic Development (NED) associated costs and $5,104,800 would be for other local features. The total projected annual NED maintenance cost beyond that of the existing program would be $108,600, all of which would be a federal cost. (An additional $472,000 was spent for federal planning, which raised the total Federal cost to $2,000,000, the statutory limit for Section 107 continuing authority projects.)

The analyses indicate that federal construction of a winter closure structure and rock revetment shoreline protection coupled with expansion of the existing boat basin in accordance with the recommended plan is technically feasible, economically justified and environmentally acceptable. The City of Dillingham has also indicated its willingness to act as a local sponsor of the project and fulfill all necessary local cooperation requirements. Therefore, the federal government should pursue the recommended plan in cooperation with the City of Dillingham.

Expansion of the present harbor is the recommended plan, as it would safely accomodate 500 vessels, 300 floating and 200 ashore. A steel closure structure in the entrance channel would be constructed to prevent sedimentation from Bristol Bay waters during winter months. The harbor would be expanded an additional 300 feet to the east, while maintaining the original north and south limits of the basin. Five acres of mooring area would be added to the basin, resulting in a total basin area of ten acres.

ECONOMIC DEVELOPMENT:

Issue: The lack of sufficient refuge from adverse sea conditons in Nushagak Bay makes commercial fishing in the area extremely risky and excessively expensive.

Goal: Reduce delays between the fishing grounds and essential marine services available at Dillingham.

Recommendation: Local interests will provide, maintain and operate, without cost to the United States, an adequate public landing or wharf with provisions for the sale of motor fuel and lubricants.

LAND USE:

Issues:
1. Further harbor development is preferred in the immediate vicinity of the existing harbor due to the area's convenience to town and the investment already in place.
2. Squaw Creek should not be developed as a boat harbor due to its relative remoteness from town and the objections of private land owners along its bank.

LAND USE (continued):

Recommendation: Provide without cost to the United States all lands, easements and rights-of-way necessary for the construction and subsequent maintenance of the project.

GOVERNMENT:

Recommendations:

1. The U.S. Fish & Wildlife Service (USFWS) should be notified of any changes in the scope of this study, any changes in the design and/or location of the proposed alternatives and any information that further Corps studies provide.
2. Local interests will:
   a. Hold and save the United States free from damages due to the construction, operation and maintenance of the project, but not including damages due to the fault or negligence of the United States or its contractors.
   b. Comply with all applicable provisions of Sections 210 and 305 of the Uniform Relocation Assistance and Land Acquisition Policy Act of 1970 (Public Law 91-646) and be bound by the terms of an agreement of assurance pursuant to Section221 of Public Law 91-611 and agree that they are obligated to pay any damages arising from its failure to perform.
   c. Agree to comply with Section 601 of Title VI of the Civil Rights Act of 1964 (PL 88-353).

ENVIRONMENTAL:

Issue: Harbor improvements should not accelerate shoreline erosion in the area.

Goals:

1. Prevent accelerated shoreline erosion resulting from harbor improvements.
2. Protect the natural resources of the area from harm caused by harbor improvements.

Recommendations:

1. Excavated material should be disposed of on land unless it is determined open water disposal would have a minimum impact on aquatic resources.
2. If a quarry site is chosen at Cape Newenham:
   a. The contractor should be made aware of the large seabird colony on Bird Rock and avoid it from June 1 to August 15 during landings and takeoffs of any private aircraft associated with the project.
   b. No barge traffic should go within two miles of the Bird Rock colony from June 1 to August 15.
   c. Any staging area for barges should be confined to the small bay adjacent to the site.

ENVIRONMENTAL (continued):

d. The loading of barges should be restricted to one area along the beach.
e. All fuel and lubricants should be stored in leakproof containers at least 500 feet from MHHW and the storage area should be bermed and lined to prevent any accidental spills from reaching the marine environment.
f. USFWS should be given the opportunity to monitor all phases of the quarry operation (the Corps concurred and recommended a joint Corps/USFWS study).

TRANSPORTATION:

Issues: 1. Access to and from any harbor improvements should be maximized.
2. Dredging operations should not interfere with the use of harbor improvements.

Goal: Minimize the need for maintenance dredging and reduce its interference with other harbor operations.

Recommendations:
1. The existing harbor should be expanded as described in the recommended plan. Estimated federal costs for this project are $1,528,000 for construction, annual federal maintenance would increase ;by $101,100 over the existing federal project.
2. Local interests should assume responsibility for construction and installation of floats to facilitate anchorage or tie-up of vessels in the harbor and assume all costs for operation and maintenance of the floats.
3. Maintenance dredged material should be disposed of in Nushagak Bay immediately offshore of the proposed small boat harbor.
4. The composition, quantity and time of disposal should be determined for any material to be excavated.
5. Local interests will provide, maintain and operate, without cost to the United States, an adequate public landing or wharf with provisions for the necessary access roads, parking areas and other needed shore facilities.

PUBLIC WORKS/PUBLIC SAFETY:

Issues: 1. The extreme crowding and inefficient mooring arrangements in the existing boat harbor are dangerous and cause costly delays and damages.
2. Hazardous fire conditions are a major concern because of fuel spills in the crowded harbor.

PUBLIC WORKS/PUBLIC SAFETY (continued):

Goals:
1. Reduce damages due to exposure of vessels to adverse sea conditions in Nushagak Bay.
2. Reduce damages due to extreme crowding and potential fire hazards in the existing harbor.

Recommendations:
1. Facilities to handle sewage, litter, human refuse and petroleum products should be incorporated into the project plan.
2. Accomplish without cost to the United States all alterations and relocations as required in streets, utilities and other structures (except federally owned breakwaters) and improvements made necessary by the construction.
3. Provide, maintain and operate, without cost to the United States, an adequate public landing or wharf with provisions for potable water and suitable sanitary facilities.
4. Establish regulations prohibiting the discharge of sewage, garbage, industrial waste and other pollutants into the water of the harbor by harbor users. These regulations shall be in accordance with applicable laws or regulations of federal, state and local authorities responsible for pollution prevention and control.

TITLE: Bristol Bay Coastal Management Program, Volume 2 - Management Plan (Conceptually Approved Draft)

PREPARED BY: Bristol Bay Coastal Resource Service Area Board

DATE: October 1984

STUDY GOAL: To provide guidance to government agencies and the private sector in the use of land and water in the coastal area of Bristol Bay.

SUMMARY:

The Management Plan covers a large geographical area in general terms, and does not provide detailed information on the City of Dillingham. The Bristol Bay Coastal Resource Service Area (CRSA) encompasses the Southwest Region and Lake and Peninsula School Districts, as well as the City of Dillingham. However, the entire region is not subject to the coastal management program. Only land and waters in the "coastal area" as defined by the CRSA Board, and activities which directly affect these areas, are subject to the program. Dillingham lies within the Nushagak subregion.

The plan briefly described the physical, biological and human environments and socioeconomic characteristics of the region as a whole. Resources were analyzed by subregion in a "broad brush" treatment. Land settlement, recreation, mining hydroelectric development and commercial fish processing were briefly analyzed for the Nushagak subregion. Specific impacts mentioned for Dillingham were increases to the services sector (stores, bars, hotels and air taxi operations) due to increased recreational use of the subregion and detrimental environmental effects of fish processing facilities in general.

Coastal management program district policies and implementation methods were described in detail, bud did not specifically address particular vicinities within the region, such as the City of Dillingham. Additionally, the city did not fall within the two Areas Meriting Special Attention identified for the region.

ECONOMIC DEVELOPMENT:

Issue: Development activities create competing demands on fish and wildlife habitat affecting the basis of the Bristol Bay Region economy.

Goals:
1. To encourage economic productivity and diversity in the region, while minimizing conflicts with the fishing industry and subsistence lifestyle.
2. Maintain opportunities to explore and develop the region's oil and gas resources in a manner that will benefit the region's residents and will not adversely impact fish and wildlife populations and habitats.
3. Maintain opportunities to explore and develop the region's mineral resources in a manner that will benefit the region's residents and will not adversely impact fish and wildlife habitats and populations.

ECONOMIC DEVELOPMENT (continued):

Recommendations:
1. Identify the potential adverse impacts of oil and gas development and mitigation measures which would minimize these impacts.
2. Ensure that stipulations designed to minimize adverse impacts from oil and gas activities are incorporated into leases and permits and are enforced.
3. Identify the potential adverse impacts of mineral development and mitigation measures which would minimize these impacts.
4. Ensure that stipulations designed to minimize negative impacts from mineral activities are incorporated into leases or permits and are enforced.

LAND USE:

Issue: State land disposal programs and expansion of existing communities may conflict with valuable fish and wildlife areas. New settlment in these areas may result in the emergence of new communities, increased demand for services and increased land and water use conflicts.

Goal: Maintain opportunities for the expansion of existing communities and the location of new resource development facilities in low hazard areas that will not lead to significant adverse impacts to fish and wildlife populations and habitats.

Recommendations:
1. Encourage the development of community land use planning efforts so that they may expand in a careful manner. Avoid the creation of new communities.
2. Ensure that state, federal and Native lands made available for private development are thoroughly evaluated and shown to be physically capable of supporting the intended use.
3. Avoid development in known geophysical hazard areas.

GOVERNMENT:

Recommendations: Adhere to the policies and consistency requirements identified within the management plan.

SUBSISTENCE:

Issue: Land uses which threaten fish and wildlife habitat and populations threaten the subsistence lifestyle. Additionally, increasing human populations and use will increase competition for limited subsistence resources.

Goal: Maintain the opportunity for continuation of the subsistence lifestyle in the Bristol Bay region.

SUBSISTENCE (continued):

Recommendations:
1. Identify species particularly important for subsistence use and ensure adequate habitat preservation.
2. Identify areas heavily used for subsistence purposes and ensure compatible land and water use.
3. Ensure maintenance of public access to subsistence use areas.

ENVIRONMENTAL:

Issues:
1. Oil and gas leasing exploration and development activities will impact fish and wildlife populations and habitat if not done in an environmentally sound manner.
2. Mineral development will also impact fish and wildlife habitat if not done in an environmentally sound manner.
3. Residents of region are virtually dependent on oil for energy. Development of some types of alternative energy sources will impact fish and wildlife populations if not done in an environmentally sound manner.

Goal: To maintain and enhance the region's fish and wildlife populations and their habitat.

Recommendations:
1. Inventory the species and their habitats. Designate species of primary importance and classify habitat requirements based on relative importance.
2. Ensure that development activity occurs in a manner that has no, or minimal, impact on important fish and wildlife populations.

TRANSPORTATION:

Issue: Many airport and ports of the Bristol Bay region are unsafe and inadequate.

Goal: Upgrade the existing transportation system to improve safety and better serve the region's needs. Maintain opportunities for future resource development which will not adversely impact fish and wildlife habitat population. Maintain the region's separation from the main state road system.

Recommendations:
1. Identify deficiencies in the existing transportation system which require upgrading.
2. Identify possible transportation routes and facilities which may be needed to develop the region's resources.
3. Identify the potential adverse impacts arising from the construction of new transportation facilities and mitigation measures which would minimize these impacts.

PUBLIC WORKS/PUBLIC SAFETY:

Goal: Encourage the conservation and efficient use of energy, as well as the development of cost effective renewable resource-based energy systems that will not adversely impact fish and wildlife population and habitats.

Recommendations:
1. Identify areas where alternative energy resources such as small scale hydro, wood, peat and wind may be available to meet local energy needs.
2. Encourage continued study of possible energy systems which may lower costs and improve reliability.
3. Maintain a flow of information from the state and federal government to the region's residents concerning energy use and conservation matters.

COMMUNITY FACILITIES:

Issues:
1. As numbers of visitors to the region increase, particularly those harvesting fish and game, conflicts between local residents and visitors may increase. Additionally, as more land is developed or transferred to private ownership, fish and game populations may be adversely affected, access to popular harvest areas may be restricted and opportunities for enjoying a high wuality wilderness experience will disappear.
2. As development occurs in the region, significant historical and archaeological resources may be lost or disturbed unless measures are taken to protect them.

Goals:
1. To protect the existin culture and lifestyle of the region's residents and minimize their distribution.
2. Maintain the region's wide variety of high quality recreational opportunities in order to meet the needs of local residents as well as state, national and international visitors.
3. Preserve the important historic and archaeological sites and artifacts of the region.

Recommendations:
1. Identify areas of high recreational value and use and ensure that these areas retain the unique qualities that resulted in their identification.
2. Ensure that public access to recreational areas is maintained.
3. Ensure that state and federal management plans encourage dispersed recreational use and maintain a wide variety of recreational opportunities.
4. Inventory sites of historic or archaeological value and identify the most significant sites worth preserving.
5. Ensure that the historic/archaeological potential of an area is considered prior to actual construction of a project.

TITLE: Bristol Bay Development Study, Volumes 1 & 2

PREPARED BY: TAMS Engineers & Frank Orth & Associates for the Alaska Department of Community & Regional Affairs & the Bristol Bay Native Association

DATE: 1984

STUDY GOALS & OBJECTIVES: To create a plan for public and private investment that will provide for the greatest return to the local and state economics from the Bristol Bay fishing industry.

Primary objectives:

- Identify public and private facility constraints and capacity shortfalls inhibiting the industry.
- Determine infrastructure improvements needed to accomodate harvesting and processing activities and delivery to markets.
- Describe and prioritize facility development requirements needed to support the Bristol Bay fishing industry and to provide for a greater share of benefits to be retained within the region and the state.

Secondary objectives:

- Present a clear picture of the existing structure of the Bristol Bay fisheries and its participants.
- Identify and analyze the principal fisheries products of the Bay and the market steps from the time of capture to wholesale markets.
- Identify the magnitude of the benefits derived from the Bristol Bay fishing industry that are not realized by local or state economies.
- Prepare a financial model of the principal Bristol Bay fisheries.
- Present an inventory and capacity evaluation of existing infrastructure serving the fishery.
- Compare market demands with existing production capacities.
- Investigate the feasibility of a seafood industrial park.
- Formulate alternative development scenarios and evaluate the potential scenarios on the basis of economic viability and rate of return to the local economy.
- Evaluate the role of the public sector in the economic development of the fishery.

SUMMARY:

The study was one of five Bristol Bay Fisheries Economic Enhancement Studies funded through a legislative appropriation. Where applicable the finding of the other four reports were synthesized into the analyses presented in this study.

Volume 1 presents an overview and analysis of the Bristol Bay fisheries, including the harvesting, processing and market distribution of salmon and herring together with an analysis of product prices, margins, revenues and expenditure patterns, as well as existing transportation services and facilities.

Several factors were found to influence facility planning:

- The economic health of the salmon industry fishery is poor at this time.
- Considerable risks are associated with public and private investment in regional development of facilities and infrastructure.
- The Bristol Bay fishing industry is characterized by the need to harvest phenomenally large volumes of fish within a relatively short time period.
- There is adequate, if not surplus, capacity in the existing fleet to harvest the allowable sustainable yield of salmon.
- Although limited entry effectively limits the number of participants in the harvesting activity, Bristol Bay residents actively seeking fishing or shorebased processing plant jobs will generally find seasonal employment.
- Fishermen have been experiencing declining ex-vessel values over the past few years along with increasing quantities of fish.
- Most of the major cannery complexes in the region developed independently into self-contained operations out of necessity and provide their own water systems, power generation, fuel storage, housing, private docking and fish processing facilities.
- Quality of fish processing has become increasingly important.
- There is unlikely to be any significant private investment in new, large scale, shorebased, processing facility development in the foreseeable future.
- Significant volumes of fish from the Bristol Bay region are purchased for shipment via air or brine export to processing plants outside the Bristol Bay region.
- The processing sector of the industry generally has been characterized by low returns on investment since at least as early as 1979.
- Participants in the fishery have experienced periods of high profitability in the past and may well do so again in the future.
- The Alaskan salmon industry is experiencing vigorous attacks on its markets from countries such as Norway and Chile which are now actively promoting farmed salmon products.
- The existing handling techniques and comples transportation system required to get Bristol Bay salmon to the comsumer detracts from the quality of the Alaskan product and is a detrimental market factor in the face of this increasing competition.
- While public investment in improvements such as public dock, staging areas, highway, airport and utility upgrades cannot be justified on the basis of fisheries income and benefits alone, they are valid opportunities for the state to assist in preserving or enhancing existing markets and to improve the quality of life and enhance local business opportunities in Bristol Bay communities.

Volume 2 describes the identified constraints to regional development of the fishery, including services and local and regional facilities. It presents options for the provision of facilities, analyzes them in terms of capital and operation and maintenance costs, potential revenues, overall benefits and includes a prioritization of recommended projects.

First, existing conditions, facility requirements and development options of the five Bristol Bay fishing districts were reviewed. Priority was given to facility and infrastructure requirements to improve the operational efficiency of the fishing industry. Then opportunities were assessed for development of a regional cold storage facility, a seafood industrial park and specialty seafood processing.

A priority ranking of development projects for the region based on the previous analyses was generated. The ranking is also based on analysis of potential benefits resulting from development of the projects, including such factors as reducing existing constraints and stimulating private investment in the region. Preliminary costs of construction, operation and maintenance of the development options were also estimated.

ECONOMIC DEVELOPMENT:

Issue: It is generally perceived that traditionally, the largest share of the economic benefits derived from the Bristol Bay fishing industry is not realized by residents of the region or the state.

Recommendations:

1. Provide cold storage and upland staging areas along with the dock.
4. The development of a cold storage facility at Dillingham should be considered. A small-scale facility, designed for seasonal use to hold transient product awaiting transshipment by marine or air mode would need to provide about 15,000 to 20,000 cubic feet of cold storage to accomodate a peak volume of 400,000 to 500,000 pounds of fish. Such capacity could also be provided by 12 to 15 refrigerated vans, offering increased operational flexibility and mobility.
5. A regional seafood industrial park could be developed in phases with subsidized construction costs.
6. Dependent on market conditions, the opportunity exists to develop secondary processing facilities to be done after the fishing season if fish are properly handled and stored in freezer vans or a cold storage facility.

LAND USE:

Recommendations:

1. The vicinity of Dragnet Fisheries cannery at Wood River and the shoreline upstream from the existing City Dock or the site of the old Ball Brothers dock were identified as potential sites for a new dock. Kanakanak, a third vicinity, was also considered to have potential as a fish dock location. (Rated as a mid-priority in the final analysis.)

LAND USE (continued):

2. Efforts should be made to designate, through the coastal zone management program, water dependent and water related sites for seafood industrial activities.

TRANSPORTATION:

Recommendations:

1. Build an "L-shaped" pile supported wharf offering 200 feet of docking space which would allow for simultaneous unloading of two tenders or other fishing vessels. Two 5,000 pound capacity hoists and a wet pump unloader are essential to allow rapid turnaround at the dock.
2. Increased fish-haul operations between the airport and Wood River or future sites at Kanakanak would necessitate road improvements. (Rated equally with dock construction.)
3. Airport improvements would also be necessary, particularly landside improvements for staging the air haul operations. (In the final analysis, this option was deemed the highest priority for the district.)

TITLE: BRISTOL BAY UNDERDEVELOPED COMMERCIAL FISHERIES POTENTIAL
PREPARED BY: Dames & Moore
DATE: December, 1984

STUDY GOALS: To evaluate the potential for extending the Bristol Bay fishing season by identifying opportunities for new fisheries; and to evaluate the economic opportunity for Bristol Bay residents who do not participate in the traditional salmon and herring fisheries.

SUMMARY: Bristol Bay supports some of the richest populations of fish in the world. Salmon and roe herring fisheries are pursued by many local residents, and these fisheries have historically provided much of the economic base of the region. However, the two traditional fisheries are expensive to enter, and they take place for only a few weeks during the year. New fishing opportunities are scarce.

For many years, foreign trawlers have been harvesting the whitefish (e.g. bottomfish, groundfish) resources of the Bering Sea. Recently, the foreign fleets were joined by U.S. fishermen (most of whom are based outside of Alaska), fishing year-round, both in joint-ventures and in completely domestic operations. Biological and commercial data for the big-boat, offshore fisheries are available, but the potential for inshore (within 15 miles of the coast) whitefish fisheries is relatively unknown. Local Bristol Bay residents needed to know if there were potential whitefish fisheries within reach of their small boats.

The study was conducted with typical 32-foot Bristol Bay fishing vessels, converted from traditional gillnet/purse seine equipment to trawling gear. The trawls were fished in "pair trawl" fashion, where two of the small boats towed one net. The boundaries of the study were the same as the boundaries of the Bristol Bay Native Association within Bristol Bay.

The technology assessment showed that pair-trawling was a practical, safe, and effective method of fishing for Bristol Bay gillnet boats to pursue. Further, the boats proved capable of fishing longline gear and small crab pots as well.

The resource assessment showed that most areas of Bristol Bay within easy reach of typical 32-foot gillnet vessels do not appear to support whitefish populations sufficient to support a fishery. Rvichak Bay, in particular, seemed to contain very low abundances of commercially-important whitefish. The same conclusions generally held true for the areas where most of the local fishermen are, such as Dillingham, Naknek, and Egegik. However, northwestern Bristol Bay, near Hagemeister Island and Cape Pierce, appeared to have a yellowfin sole population sufficient to support a fishery.* Further, southeastern Bristol Bay, along the Alaska Peninsula (south of Cape Greig), appeared to offer the greatest promise, in terms of abundance of marketable whitefish species, such as yellowfin sole, rock sole, and Pacific cod.

The economic assessment showed that although the prices of whitefish might average approximately one-tenth those of salmon, some economic opportunity might exist for Bristol Bay fishermen to conduct a whitefish fishery in western or southeastern Bristol Bay. Such an operation would require the fishermen to maximize their trawl size, fishing time (per day and per season), and general efficiency (e.g. frequent deliveries coordinated to the processors' schedules). Also, the deliveries (sales) would best be made to a floating processing vessel accompanying the fishing fleet.

---

* In the spring of 1985, based inpart on the results of this study, local Bristol Bay herring fishermen delivered yellowfin sole to Japanese floating processors, in an "internal waters joint-venture", using 32-foot vessels off Togiak.